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INTERIM DEFINITIVE ORBIT FOR THE SATELLITE 1959-IOTA, EXPLORER VII FOR THE PERIOD FROM 1540 U.T. October 13, 1959 to 1139 U.T. November 11, 1959

November 11, 1959

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Interim Definitive Ephemeris of the Satellite 1959-Iota, EXPLORER-VII

INTERIM DEFINITIVE ORBIT FOR THE SATELLITE 1959-IOTA, EXPLORER-VII

Introduction

The interim definitive ephemeris for the orbit of the satellite 1959-Iota, EXPLORER-VII, during the fourth week of its radio lifetime is presented in the following pages. The information is presented in the form of tables which give the latitude and longitude of the subsatellite point and the satellite height for each minute of time. The subsatellite point is defined here as the point on the Earth's surface over which the satellite was determined to be at the indicated time. This form of presentation was recommended by the IGY* agencies concerned, for use in specifying the orbital positions of IGY satellites.

Time is specified by giving the calendar month and, in columns, the day, hour and minute of Greenwich mean time. Longitude and geographic latitude are specified to the nearest second of arc. East longitudes and north latitudes are taken as positive. The satellite height is expressed in kilometers to four decimal places.

Determination of Orbit

The ephemeris given is based upon radio interferometer observations obtained from the worldwide Minitrack network established under Project Vanguard (See Table I). The ephemeris was arrived at by obtaining one or more overlapping orbital arcs. Each individual arc was determined by means of a

*International Geophysical Year (July, 1957 through December 31, 1958).

differential correction process of the Eckert-Brouwer type[1]. The satellite position was determined using a formulation developed by Herget and Musen[2]. This formulation represents both the secular and periodic perturbations due to the Earth's oblateness. It represents the effect of atmospheric drag by identifying it with the linear part of the change in the mean motion which was observed to occur during the interval spanned by the orbital arc. The parameter which represents this atmospheric effect on the mean motion, and which can be interpreted in terms of a period decrement, was regarded as a seventh unknown which was solved for simultaneously with the six orbital elements in the differential correction process. The orbital elements given by the differential correction process were the semi-major axis, a, the eccentricity, e, the inclination, i, the right ascension of the ascending node, Ω, the argument of perigee, ω, the mean anomaly, M_M, and the epoch, T_M. The observations which form the basis of each orbital arc were discussed. The final differential correction result was based upon the observations which were retained. The value of the standard deviation of fit for each orbital arc is given in Table II in milliradians of arc referred to the observer. These are then the basic measure of the accuracy with which this interim definitive orbit is determined. The accuracies of the corresponding satellite positions are functions of the range involved. These ranges are of the order of 1000 miles on the average, hence the values shown in the third column of Table II can be thought of as approximate values of the uncertainties in the positions in miles.

[1,2] These numbers refer to references listed at the end of the text of the report.

In cases where there is more than one arc, the transfer from one arc to the next occurs at a time in the interval of overlap at which the radical distance between the positions specified by the two adjacent arcs is a minimum. Values of this distance and the corresponding differences in the coordinates also are given in Table II. The ephemeris in each volume in this series begins at the time of transfer from the previous arc. The arcs are identifies by the numbers appearing at the beginning of the interval which they cover. The differences between the positions at the transfer times are comparable to the residuals within the inidivual arcs. Hence the complete ephemeris provides a piecewise continuous representation of the entire orbital arc.

Equator crossing information is presented for ascending nodes. It appears in lines between the entries for the minute vectors which occur just before and after the nodal crossings. These lines contain the day, hour, minute and second of the nodal crossing; the longitude of the node in degrees, minutes and seconds; the pass number; and the satellite height in kilometers to four decimal places.

Certain of the station alerts which were generated for the benefit of observers are also shown in the sets of columns giving the satellite positions. These station alert lines give information identifying the station; the time of the passage of the satellite across the station's meridian in days, hours, minutes and seconds to the nearest millisecond; the zenith angle in degrees; and the range in kilometers to four decimal places. The zenith angle is taken as positive when the satellite is north of the station. The direction of the satellite's traverse across the station's meridian also is indicated. A key to the literal symbols identifying the stations is contained in Table I. Initial conditions for the first orbit were obtained by methods such as those described in reference 3.

Acknowledgements

The Vanguard Computing Center and the Minitrack system were established as part of Project Vanguard under Dr. John P. Hagen, the Project Director, now Assistant Director for Program Coordination, Office of Space Flight Development, NASA. The worldwide Minitrack system was established and is operated under the direction of Mr. J. T. Mengel, Head of the Radio Tracking Branch of Project Vanguard, now Assistant Director, Tracking and Data Systems, Goddard Space Flight Center, NASA. The orbit determination procedures were established by the Vanguard Working Group on Orbits, whose membership was as follows: Dr. G. M. Clemence, Scientific Director of the Naval Observatory; Dr. R. Duncombe, Assistant Director of the Nautical Almanac of the Naval Observatory; Mr. J. J. Fleming, Head of the Operational Research Branch of the Applications Research Division of the Naval Research Laboratory; Dr. Paul Herget, Director of the Cincinnati Observatory; and Dr. J. W. Siry, Chairman of the Vanguard Working Group on Orbits, and Head of the Theory and Analysis Branch of Project Vanguard, now Chief of the Theory and Analysis Staff, Tracking and Data Systems, Goddard Space Flight Center, NASA. The formulation of the General Oblateness Perturbation Program and the Eckert-Brouwer Differential Correction Program was developed by Drs. Herget and Musen of the Cincinnati Observatory. These formulations were programmed for the IBM-704 computer by a staff of mathematicians of the International Business Machines Corporation under D. A. Quarles, Jr. Key members of this staff were Dr. G. Collins and Mr. I. Krongold. The IBM 704 programs were converted to IBM 709 programs under the supervision of Mr. R. Mowlem. The calculations were performed on the IBM 709 at the Vanguard Computing Center. This Center was established by the International Business Machines

Corporation under a contract with the Office of Naval Research as part of Project Vanguard. Dr. T. Horton, Mr. J. Wieker and Mr. B. Oldfield have been in charge of the IBM operations at the Center. Mr. R. Mowlem is in charge of the IBM phases of the Vanguard operations at the Center. The interim definitive orbits were determined by members of the Vanguard Theory and Analysis Staff under the supervision of Mr. R. W. Bryant, Head of the Orbit Determination and Analysis Section of the Theory and Analysis Staff. Miss M. de Novens, Mr. C. Doll, Mr. A. G. Johnson, Mrs. M. Roy and Mr. J. Sorenson participated in this phase of the work. Related work in connection with determining satellite position predictions was done by Mr. C. H. Chrisman, Mr. B. Richardson and other members of the Operational Research Branch of the Naval Research Laboratory.

REFERENCES

1. Eckert, W. J., and Brouwer, D., "The Use of Rectangular Coordinates in the Differential Correction of Orbits", Astronomical Journal 46:125 (1937); Errata, 47:83(1938).

2. Herget, P., and Musen, P., "General Theory of Oblateness Perturbations", American Mathematical Society Symposium on Orbit Theory, 1957.

3. Siry, J. W., "The Vanguard IGY Earth Satellite Program", Fifth General Assembly of CSAGI, Moscow, 1958.

Table I
Station Locations

Station Designation	Station Location	East Longitude	Latitude	Elevation (Ft)
ABDEEN	Aberdeen Proving Ground, Md.	283 55 04	N 39 28 28	
2AFMTC	AFMTC, Fla.	279 24 21	N 28 24 53	
AGASTA	Antofagasta, Chile	289 43 36.838	S 23 37 15.993	1703
ALASKA	Stanford Research, Alaska	212 09 36	N 64 51 24	630
1ALBUQ	Kirtland AFB, Albuquerque	253 27 30.837	N 35 03 18.25	5310
1ALMGO	Holloman AFB, Almagorda, N.M.	254 02 58.045	N 35 52 24.27	4350
2ALSKA	Fairbanks, Alaska	212 10 00	N 64 52 22.8	
ARKANS	Forrest City, Arkansas	269 14 10	N 35 00 54	
2AZORS	AZORES	332 55 15.4	N 38 45 10.8	
BELVOR	Ft. Belvoir, Virginia	282 52 14.8	N 38 42 03.5	
BLKSTA	Black Station, Nigeria, JPL	003 54 01	N 07 26 22	
1 BLOEM	Bloemfontein, So. Africa	026 13 35.6	S 29 06 19.52	4901
BOLDER	Boulder, Colo., Bustans Res.	254 45 42	N 40 07 42	5560
BPOINT	Blossom Point, Maryland	282 54 48.170	N 38 25 49.718	15
BRMUDA	Paynters Hill, Bermuda	295 17 57.040	N 32 20 11.677	
BSANDS	Barking Sands, Kauai, Hawaii	200 12 40	N 22 02	14
1CAPTO	Capetown, South Africa	018 28 37.984	S 33 56 00.440	22
1CHILK	China Lake, California, NOTS	242 20 13.2	N 35 39 25.2	2300
2COLNS	Collins Radio, Iowa	268 25 23	N 42 02 05	
CPCAN1	Cape Canaveral, Fla., XN-1	279 24 09.949	N 28 13 35.279	
CPHATS	Cape Hatteras, N.C.	284 28 58	N 35 15 03	
1CURAC	Curacao Island, N.W.I.	291 09 46.00	N 12 05 50.4	23
DGRAND	Grand Turk Is., Down Range	288 51 56.685	N 21 30 21.196	30
DIANAO	Ft. Monmouth, N.J., Diana	285 56 20.4	N 40 11 02	
EANTIG	East Antigua	298 13 16.536	N 17 08 32.586	16
ELPHAB	Elephant Butte, New Mexico	252 00 10	N 33 26 35	
FTMONM	Ft. Monmouth, New Jersey	285 58 30	N 40 15 30	
2FTMON	Ft. Monmouth, New Jersey	285 58 30	N 40 15 30	
FTSILL	Ft. Sill, Oklahoma	261 35 40	N 34 39 20	
FTSTEW	Ft. Stewart, Georgia	278 30 18.040	N 31 59 07.805	33
FTSTEW	Ft. Stewart, Georgia	278 29 26	N 31 58 36	
GOLDST	Goldstone Lake, Calif., JPL	243 09 06	N 35 23 22.8	3410
2GOLDS	Goldstone Lake, Calif.	243 08 57	N 35 26 49	
GUAMIS	Guam Mariana Is., Pacific	144 51 07.824	N 13 37 52.802	
HAVANA	Havana, Cuba	277 28 33.880	N 22 52 18.132	141
HAWAII	Hawaii AF, Lunar	204 18 53	N 18 56 32	
HAWSTL	Hawaii STL Radar	204 18 54	N 18 49 26.22	
HDLBRG	Heidelberg, Germany	008 43 14.8	N 49 23 54	1857
JOBURG	Esselen Park, South Africa	028 14 28.376	S 26 01 56.846	5370
JODREL	Jodrell Banks Obs., England	357 41 38	N 53 03 03	
JOHNIS	Johnston, Johnston Is., Pac.	190 29	N 16 44	
1JUPTR	Jupiter, Palm Beach, Fla.	279 50 30.48	N 27 00 27.04	75
LANGLY	Langley Rsch. Center, Va.	283 36 34.580	N 37 06 10.995	
LAREDO	Laredo, Texas	260 38 00	N 27 32 00	656
LIMAPU	Lima, Peru	282 50 58.182	S 11 46 36.492	161
LINCON	Millstone, Mass.	288 30 28	N 42 37 03	512
LINCON	Lincoln Lab., Millstone Radar	288 30 32.4	N 42 25 27.84	
LUZONP	Luzon Island, Philippines	120 31 18.0	N 15 11 37.0	
MADRID	Madrid, Spain	356 34 48	N 40 15 36	
1MAUIO	Maui, Hawaii	203 44 23.4	N 20 42 36	10,000
MISLAK	Silver Lake, Greenville, Miss.	268 58 44	N 33 08 54	

Continued

Table I—Concluded

Station Designation	Station Location	East Longitude	Latitude	Elevation (Ft)
1NATAL	Naini Tal, India	079 25 54	N 29 22 32	6312
NELCAL	San Diego, Calif.	243 01 43.078	N 32 34 47.420	514
2NOTSS	Naval Ord Station, Calif.	242 26 23	N 35 40 37	
1OLFAN	Olifantsfontein, So. Africa	028 14 53.91	S 25 57 33.85	5066
OOMERA	Woomera, Australia	136 46 56	S 31 06 12	510
1ORGAN	Organ Pass, New Mexico	253 26 51.74	N 32 25 24.25	5417
PALOTO	Palo Alto, Calif.	237 49 29	N 37 24 11	499
PANTIG	Antigua Island, B.W.I.	298 13 16.536	N 17 08 32.586	16
1PDENA	Pasadena, Calif.	241 30 38	N 34 06 56	
PNSTAT	Penn. State Ionosph. Res. Lab.	282 08	N 40 48	1200
PONAPE	Ponape Island, Pacific	158 11 48.6	N 06 56 47.3	
PTRICO	Puerto Rico	292 54 04	N 18 03 54	
1QUIPA	Arequipa, Peru	288 30 31.4	S 16 27 43.5	8045
QUITOE	Quito, Ecuador	281 25 14.770	S 00 37 21.751	11,703
REDSTA	Red Station, Calif., JPL	243 35 05	N 33 04 19	
RNAMUR	Roi Namur Island, Pacific	165 27 37.5	N 09 23 12.1	
2RSTON	Redstone Arsenal, Ala.	273 20 08.5	N 34 40 37.9	
1SACPK	Sacramento Peak, New Mexico	254 10 47	N 32 47 28	9000
SAMOAI	Samoa Island, Pacific	189 17 12	S 14 19 50	
SANDIG	Brown Field, San Diego, Calif.	243 01 53	N 32 34 42	
1SHRAZ	Shiraz, Iran	052 31 33.75	N 29 38 40.18	5249
SILVER	Silver Sta., Singapore, JPL	103 49 00	N 01 19 00	
SNTAGO	Santiago, Chile	289 19 51.283	S 33 08 58.106	2280
1SPAIN	S. Fernando, Cadiz, Spain	353 47 36.86	N 36 27 33.83	79
STANF	Stanford Research, Calif.	237 49 29	N 37 24 11	499
STNFDU	Rad. Prop. Lab., Stanford U., Cal.	237 50 43	N 37 25 39	500
STUMNK	Stump Neck, Md., N.R.L.	282 47 47	N 38 32 44	
2TEMPL	Temple City, L.A., Calif.	241 55 25	N 34 06 08	
2THULE	Thule, Greenland	291 14 27.3	N 76 30 57.6	
1TOKYO	Tokyo, Japan	159 32 28.22	N 35 40 11.08	190
UGRAND	Grand Turk Is., Up Range	288 51 56.685	N 21 30 21.196	30
UILNOS	Univ. Illinois, Dept. Elec. Eng.	271 46 31.5	N 40 06 20.2	774
UWISCN	University Wis. Observatory	270 19 36.5	N 43 04 40.6	1220
VANBUR	Van Buren, Maine	292 00 00	N 47 11 40	
2VANBU	Van Buren, Maine	292 00 00	N 47 11 40	
1VILDO	Villa Dolores, Argentina	294 53 30	S 31 56 32	1962
WAKEIS	Wake Island, Pacific	166 36 04.4	N 19 17 58	
WANTIG	West Antigua	298 13 16.536	N 17 08 32.586	16
WHITES	White Sands, New Mexico	254 15 43.856	N 33 42 17.993	
2WHITE	White Sands, New Mexico	254 15 43.856	N 33 42 17.993	
WOTHOI	Wotho Island, Pacific	166 02	N 10 07	
1YUMA	Vincent AFB, Yuma, Arizona	245 24 53	N 32 39 09	212

Table II

[illegible]

Summary of Certain Position Information
for Arcs Extending From
[illegible] October 13, 1959 to 1139 U.T. November 11, 1959

Arc No.	Interval (-h-m) U.T.	Standard Deviation of Fit (Milliarc.)	Coordinate Differences & Corresponding Distances Between Points in Adjacent Books at Transfer Times. Distances Are In Nautical Miles; Angles in Nautical Miles at Seal Level. Long.	Lat.	Ht.	Radial Distance
	[illegible] to 20-15-40	3.0				
2	20-15-41 to 28-20-27	2.9	1.3	[illegible]	0.4	1.7
3	[illegible] to [illegible]	3.0	0.8	[illegible]	0.7	1.3
4	[illegible] to 32-31-39	3.4	0.9	0.3	0.4	1.1

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   4 17 48 -154 40 17   +50  6  3                                  +  600.281
   4 17 49 -149  8 36   +49 28 45                                  +  591.738
   4 17 50 -143 46 43   +48 34 30                                  +  584.085
   4 17 51 -138 37 38   +47 24 19                                  +  577.362
   4 17 52 -133 43 28   +45 59 24                                  +  571.605
   4 17 53 -129  5 23   +44 21  6                                  +  566.846
   4 17 54 -124 43 46   +42 30 50                                  +  563.115
STNFDU  98  4 17 54 37.125  N40.3644     716.095     SE
   4 17 55 -120 38 22   +40 29 58                                  +  560.438
NELCAL 121  4 17 55 57.174  N53.3649     876.499     SE
GOLDST 103  4 17 55 59.152  N35.0136     654.252     SE
BOLDER  95  4 17 55 10.414  W72.5725    1419.418     SE         **
   4 17 56 -116 48 31   +38 19 47                                  +  558.835
STNFDU  98  4 17 56 23.727  E51.0639     839.490     SE         **
   4 17 57 -113 13 11   +36  1 31                                  +  558.324
WHITES 111  4 17 57 57.392  W30.7744     641.429     SE         **
FTSILL 110  4 17 57 34.094  W70.9488    1349.229     SE         **
ARKANS 109  4 17 57 25.216  W83.0884    2066.040     SE         **
GOLDST 103  4 17 57 15.843  E39.5381     703.914     SE         **
2RSTON  99  4 17 57 33.579  W86.8816    2403.151     SE         **
   4 17 58 -109 51 12   +33 36 17                                  +  558.917
WHITES 111  4 17 58 58.861  S29.4240     635.500     SE
NELCAL 121  4 17 58 24.501  E59.4943     997.069     SE         **
   4 17 59 -106 41 19   +31  5  3                                  +  560.620
BOLDER  95  4 17 59 28.524  S70.0366    1314.783     SE
   4 18  0 -103 42 16   +28 28 44                                  +  563.434
CPCAN1 107  4 18  0  5.541  W86.6212    2390.829     SE         **
   4 18  1 -100 52 49   +25 48  9                                  +  567.357
FTSILL 110  4 18  1 55.026  S72.2874    1433.117     SE
   4 18  2 -  98 11 47   +23  4  1                                  +  572.378
   4 18  3 -  95 38  3   +20 16 58                                  +  578.484
   4 18  4 -  93 10 36   +17 27 36                                  +  585.651
   4 18  5 -  90 48 27   +14 36 26                                  +  593.854
ARKANS 109  4 18  5  0.956  S86.3177    2431.727     SE
   4 18  6 -  88 30 41   +11 43 57                                  +  603.061
   4 18  7 -  86 16 30   +  8 50 35                                  +  613.234
   4 18  8 -  84  5  3   +  5 56 47                                  +  624.329
   4 18  9 -  81 55 36   +  2  2 53                                  +  636.299
   4 18 10 -  79 47 27   +  0  9 17                                  +  649.091
QUITOE 125  4 18 10 34.027  S  9.1325     660.721     SE
QUITOE 125  4 18 10 16.003  W  6.9399     653.421     SE         **
   4 18 11 -  77 39 52   - 2 43 40                                  +  662.648
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LIMAPU 124  4 18 11 14.402  N59.8422   1177.518    SE
  4 18 12 - 75 32 10  - 5 35 39                     +  676.908
  4 18 13 - 73 23 40  - 8 26 20                     +  691.807
  4 18 14 - 71 13 42  -11 15 22                     +  707.276
LIMAPU 124  4 18 14 11.000  E48.8202   1015.744    SE       **
  4 18 15 - 69  1 33  -14  2 26                     +  723.246
  4 18 16 - 66 46 31  -16 47 12                     +  739.644
  4 18 17 - 64 27 52  -19 29 18                     +  756.396
  4 18 18 - 62  4 49  -22  8 22                     +  773.427
AGASTA 123  4 18 18 33.951  E57.4140   1297.446    SE       **
  4 18 19 - 59 36 36  -24 44  0                     +  790.660
  4 18 20 - 57  2 23  -27 15 47                     +  808.020
  4 18 21 - 54 21 17  -29 43 15                     +  825.430
  4 18 22 - 51 32 25  -32  5 55                     +  842.816
  4 18 23 - 48 34 54  -34 23 13                     +  860.104
  4 18 24 - 45 27 49  -36 34 33                     +  877.222
  4 18 25 - 42 10 18  -38 39 15                     +  894.098
  4 18 26 - 38 41 33  -40 36 35                     +  910.665
  4 18 27 - 35  0 54  -42 25 48                     +  926.855
  4 18 28 - 31  7 54  -44  6  2                     +  942.607
  4 18 29 - 27  2 23  -45 36 26                     +  957.859
  4 18 30 - 22 44 31  -46 56  6                     +  972.555
  4 18 31 - 18 14 59  -48  4 10                     +  986.639
  4 18 32 - 13 34 57  -48 59 50                     + 1000.061
  4 18 33 -  8 46 11  -49 42 22                     + 1012.774
  4 18 34 -  3 50 58  -50 11 13                     + 1024.735
  4 18 35 +  1  8  2  -50 26  2                     + 1035.902
  4 18 36 +  6  7 48  -50 26 40                     + 1046.241
  4 18 37 + 11  5 21  -50 13 1                      + 1055.717
  4 18 38 + 15 57 44  -49 46  2                     + 1064.303  TWILIGHT
  4 18 39 + 20 42 27  -49  5 40                     + 1071.972  TWILIGHT
  4 18 40 + 25 17 25  -48 12 50                     + 1078.704  TWILIGHT
  4 18 41 + 29 41  5  -47  8 24                     + 1084.480  TWILIGHT
  4 18 42 + 33 52 30  -45 53 1                      + 1089.286  TWILIGHT
  4 18 43 + 37 51  9  -44 28 20                     + 1093.112  TWILIGHT
  4 18 44 + 41 37  2  -42 54 35                     + 1095.951  TWILIGHT
  4 18 45 + 45 10 24  -41 12 52                     + 1097.798  TWILIGHT
  4 18 46 + 48 31 48  -39 24  7                     + 1098.654  TWILIGHT
  4 18 47 + 51 41 58  -37 28 40                     + 1098.522
  4 18 48 + 54 41 40  -35 27 56                     + 1097.407
  4 18 49 + 57 31 46  -33 22  0                     + 1095.320
  4 18 50 + 60 13 10  -31 11 35                     + 1092.274
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  4 18 51 + 62 46 43   -28 57  9                          + 1088.283
  4 18 52 + 65 13 16   -26 39 10                          + 1083.367
  4 18 53 + 67 33 37   -24 18  1                          + 1077.546
  4 18 54 + 69 48 32   -21 54  2                          + 1070.844
  4 18 55 + 71 58 44   -19 27 33                          + 1063.289
  4 18 56 + 74  4 56   -16 58 50                          + 1054.909
  4 18 57 + 76  7 47   -14 28  9                          + 1045.736
  4 18 58 + 78  7 52   -11 55 44                          + 1035.803
  4 18 59 + 80  5 50   - 9 21 49                          + 1025.146
  4 19  0 + 82  2 15   - 6 46 35                          + 1013.804
  4 19  1 + 83 57 41   - 4 10 16                          + 1001.815
  4 19  2 + 85 52 41   - 1 33  4                          +  989.222
   4 19  2 35  LONG.   + 87  0 34  PASS NO.   315 +  981.465
  4 19  3 + 87 47 48   + 1  4 51                          +  976.069
  4 19  4 + 89 43 38   + 3 43 14                          +  962.399
  4 19  5 + 91 40 45   + 6 21 54                          +  948.260
  4 19  6 + 93 39 45   + 9  0 36                          +  933.699
  4 19  7 + 95 41 16   +11 39  6                          +  918.764
  4 19  8 + 97 45 58   +14 17  9                          +  903.507
  4 19  9 + 99 54 33   +16 54 26                          +  887.979
  4 19 10 +102  7 47   +19 30 38                          +  872.230
  4 19 11 +104 26 29   +22  5 24                          +  856.314
  4 19 12 +106 51 33   +24 38 19                          +  840.284
  4 19 13 +109 23 56   +27  8 53                          +  824.195
  4 19 14 +112  4 41   +29 36 37                          +  808.100
  4 19 15 +114 54 55   +32  0 52                          +  792.054
  4 19 16 +117 55 49   +34 20 58                          +  776.113
TOKAWA 108  4 19 16 12.482  W74.8148   1969.370    NE          **
  4 19 17 +121  8 35   +36 36  6                          +  760.332
  4 19 18 +124 34 29   +38 45 22                          +  744.765
  4 19 19 +128 14 43   +40 47 45                          +  729.468
  4 19 20 +132 10 22   +42 42  6                          +  714.497
  4 19 21 +136 22 16   +44 27  9                          +  699.905  TWILIGHT
TOKAWA 108  4 19 21 13.521  N64.2418   1357.490    NE
  4 19 22 +140 50 52   +46  1 32                          +  685.748  TWILIGHT
  4 19 23 +145 36  7   +47 23 51                          +  672.078  TWILIGHT
  4 19 24 +150 37 12   +48 32 38                          +  658.950  TWILIGHT
  4 19 25 +155 52 28   +49 26 31                          +  646.415  TWILIGHT
  4 19 26 +161 19 18   +50  4 16                          +  634.525  TWILIGHT
  4 19 27 +166 54 16   +50 24 56                          +  623.329
  4 19 28 +172 33 14   +50 27 52                          +  612.877
  4 19 29 +178 11 44   +50 12 52                          +  603.215
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  4 19 30 -176 14 41   +49 40  5                          +  594.387
  4 19 31 -170 49 59   +48 50 10                          +  586.437
  4 19 32 -165 37 24   +47 44  1                          +  579.484
  4 19 33 -160 39 14   +46 22 49                          +  573.326
  4 19 34 -155 56 55   +44 47 52                          +  568.237
  4 19 35 -151 31  2   +43  0 35                          +  564.168
  4 19 36 -147 21 29   +41  2 20                          +  561.145
  4 19 37 -143 27 41   +38 54 28                          +  559.191
STNFDU  98  4 19 37 39.345  W79.8093    1823.074          SE        **
  4 19 38 -139 48 41   +36 38 12                          +  558.324
GOLDST 103  4 19 38 31.482  W83.1514    2068.389          SE        **
  4 19 39 -136 23 20   +34 14 40                          +  558.558
  4 19 40 -133 10 26   +31 44 53                          +  559.902
  4 19 41 -130  8 30   +29  9 49                          +  562.359
  4 19 42 -127 16 50   +26 30 15                          +  565.926
  4 19 43 -124 33 42   +23 46 57                          +  570.597
STNFDU  98  4 19 43 [illegible]  581 1778   [illegible]57.624  SE
  4 19 44 -121 58  9    21  0 35                          +  576.357
  4 19 45 -119 29  9   [illegible]5 11 42                 +  583.197
  4 19 46 -117  5 41   - 5 20 58                          +  591.064
GOLDST 103  4 19 46  6.110  S86.[illegible]6   [illegible].41[illegible]  SE
  4 19 47 -114 46 51   +12 28 49                          +  599.956
  4 19 48 -112 31 46   + 9 35 31                          +  609.827
  4 19 49 -110 19 40   + 6 41 47                          +  620.[illegible]39
  4 19 50 -108  9 45   + 3 47 50                          +  632.[illegible]84
  4 19 51 -106  1 18   + 0 54  5                          +  644.972
  4 19 52 -103 53 36   - 1 59  7                          +  659.194
  4 19 53 -101 45 57   - 4 51 25                          +  672.240
  4 19 54 - 99 37 41   - 7 42 31                          +  686.[illegible]46
  4 19 55 - 97 28  7   -10 32  3                          +  702.24[illegible]
  4 19 56 - 95 16 34   -13 19 48                          +  719.[illegible]
  4 19 57 - 93  2 17   -16  5  9                          +  [illegible]54.[illegible]8
  4 19 58 - 90 44 35   -18 48                             -  [illegible]
  4 19 59 - 88 22 42   -21 27 56                          +  797.[illegible]
  4 20  0 - 85 55 50   -24  4 32                          -  [illegible]
  4 20  1 - 83 23 10   -26 37 24                          +  [illegible]
  4 20  2 - 80 43 51   -29  6  4                          +  [illegible]
  4 20  3 - 77 57  0   -31 30  7                          +  [illegible]
SNTAGO 122  4 20  3 42.342  W3[illegible].7341    [illegible]  SE        **
  4 20  4 - 75  1 42   -33 48 49                          +  [illegible]
  4 20  5 - 71 57  5   -36  1 46                          +  [illegible]
SNTAGO 122  4 20  5 23.938  S28 [illegible]6+5    [illegible]  SE
```

```
  4 20  6 - 68 42 13   -38  8 15                          +  888.724
  4 20  7 - 65 16 20   -40  7 34                          +  905.396
  4 20  8 - 61 38 41   -41 58 57                          +  921.713
  4 20  9 - 57 48 46   -43 41 34                          +  937.610
  4 20 10 - 53 46 20   -45 14 34                          +  953.026
  4 20 11 - 49 31 28   -46 37  3                          +  967.903
  4 20 12 - 45  4 43   -47 48  9                          +  982.186
  4 20 13 - 40 27  7   -48 47  1                          +  995.823
  4 20 14 - 35 40 17   -49 32 56                          + 1008.765
  4 20 15 - 30 46 22   -50  5 17                          + 1020.968
  4 20 16 - 25 48  0   -50 23 39                          + 1032.391
  4 20 17 - 20 48  3   -50 27 50                          + 1042.995
  4 20 18 - 15 49 37   -50 17 53                          + 1052.748
  4 20 19 - 10 55 37   -49 54  6                          + 1061.619
  4 20 20 -  6  8 43   -49 16 59                          + 1069.581  TWILIGHT
  4 20 21 -  1 31  7   -48 27 11                          + 1076.613  TWILIGHT
  4 20 22 +  2 55 32   -47 25 34                          + 1082.695  TWILIGHT
  4 20 23 +  7 10  6   -46 13  0                          + 1087.812  TWILIGHT
  4 20 24 + 11 12  0   -44 50 26                          + 1091.951  TWILIGHT
  4 20 25 + 15  1  4   -43 18 48                          + 1095.106  TWILIGHT
  4 20 26 + 18 37 32   -41 38 59                          + 1097.270  TWILIGHT
  4 20 27 + 22  1 53   -39 51 50                          + 1098.443  TWILIGHT
  4 20 28 + 25 14 46   -37 58  9                          + 1098.628
JOBURG 118  4 20 28 58.991  S52.6596   1621.891     NE
  4 20 29 + 28 17  0   -35 58 38                          + 1097.829
  4 20 30 + 31  9 25   -33 53 55                          + 1096.055
  4 20 31 + 33 52 55   -31 44 34                          + 1093.316
  4 20 32 + 36 28 20   -29 31  6                          + 1089.629
  4 20 33 + 38 56 32   -27 13 59                          + 1085.010
JOBURG 118  4 20 33 30.800  E55.5914   1682.063     NE        **
  4 20 34 + 41 18 21   -24 53 36                          + 1079.481
  4 20 35 + 43 34 32   -22 30 19                          + 1073.063
  4 20 36 + 45 45 50   -20  4 27                          + 1065.784
  4 20 37 + 47 52 58   -17 36 18                          + 1057.670
  4 20 38 + 49 56 33   -15  6  6                          + 1048.753
  4 20 39 + 51 57 16   -12 34  8                          + 1039.066
  4 20 40 + 53 55 41   -10  0 36                          + 1028.644
  4 20 41 + 55 52 24   - 7 25 43                          + 1017.523
  4 20 42 + 57 48  0   - 4 49 41                          + 1005.744
  4 20 43 + 59 43  1   - 2 12 43                          +  993.347
   4 20 43 50  LONG.   + 61 19 49  PASS NO.   316 +  982.428
  4 20 44 + 61 38  1   + 0 24 59                          +  980.375
```

```
  4 20 45 + 63 33 35   + 3  3 14                          +  966.872
  4 20 46 + 65 30 18   + 5 41 48                          +  952.885
  4 20 47 + 67 28 43   + 8 20 29                          +  938.460
  4 20 48 + 69 29 30   +10 59  1                          +  923.646
  4 20 49 + 71 33 17   +13 37  9                          +  908.492
  4 20 50 + 73 40 46   +16 14 37                          +  893.050
  4 20 51 + 75 52 42   +18 51  5                          +  877.370
  4 20 52 + 78  9 52   +21 26 12                          +  861.506
  4 20 53 + 80 33 11   +23 59 34                          +  845.510
  4 20 54 + 83  3 34   +26 30 45                          +  829.436
  4 20 55 + 85 42  2   +28 59 12                          +  813.339
  4 20 56 + 88 29 40   +31 24 22                          +  797.272
  4 20 57 + 91 27 39   +33 45 33                          +  781.291
  4 20 58 + 94 37 12   +36  2  0                          +  765.451
  4 20 59 + 97 59 34   +38 12 49                          +  749.808
  4 21  0 +101 35 56   +40 17  2                          +  734.416
  4 21  1 +105 27 27   +42 13 32                          +  719.331
  4 21  2 +109 35  2   +44  1  4                          +  704.607  TWILIGHT
  4 21  3 +113 59 15   +45 38 19                          +  690.300  TWILIGHT
  4 21  4 +118 40 10   +47  3 51                          +  676.462  TWILIGHT
  4 21  5 +123 37 13   +48 16 15                          +  663.149  TWILIGHT
  4 21  6 +128 48 56   +49 14  5                          +  650.411  TWILIGHT
  4 21  7 +134 13  0   +49 56  6                          +  638.302  TWILIGHT
TOKAWA 108  4 21  7 34.051  N78.3609   1892.053    NE
  4 21  8 +139 46 11   +50 21 16                          +  626.870
  4 21  9 +145 24 28   +50 28 50                          +  616.167
  4 21 10 +151  3 26   +50 18 28                          +  606.239
  4 21 11 +156 38 39   +49 50 16                          +  597.131
  4 21 12 +162  5 57   +49  4 43                          +  588.887
  4 21 13 +167 21 54   +48  2 41                          +  581.548
  4 21 14 +172 23 58   +46 45 16                          +  575.153
  4 21 15 +177 10 27   +45 13 47                          +  569.737
  4 21 16 -178 19 24   +43 29 35                          +  565.331
  4 21 17 -174  5 40   +41 34  4                          +  561.964
  4 21 18 -170  7 51   +39 28 34                          +  559.660
  4 21 19 -166 25  6   +37 14 22                          +  558.439
  4 21 20 -162 56 20   +34 52 37                          +  558.316
BSANDS 100  4 21 20 57.591  N70.4818   1330.317    SE
  4 21 21 -159 40 18   +32 24 22                          +  559.301
  4 21 22 -156 35 46   +29 50 35                          +  561.398
  4 21 23 -153 41 26   +27 12  6       6                  +  564.609
```

```
  4 21 24 -150 56  8  +24 29 42                          +  568.927
BSANDS 100  4 21 24 53.371  E69.8338   1334.279     SE        **
  4 21 25 -148 18 42  +21 44  3                          +  574.340
  4 21 26 -145 48  5  +18 55 46                          +  580.831
  4 21 27 -143 23 15  +16  5 25                          +  588.377
  4 21 28 -141  3 16  +13 13 30                          +  596.950
  4 21 29 -138 47 16  +10 20 29                          +  606.514
  4 21 30 -136 34 26  + 7 26 47                          +  617.030
  4 21 31 -134 24  0  + 4 32 49                          +  628.452
  4 21 32 -132 15 12  + 1 38 57                          +  640.732
  4 21 33 -130  7 20  - 1 14 28                          +  653.814
  4 21 34 -127 59 42  - 4  7  5                          +  667.639
  4 21 35 -125 51 38  - 6 58 34                          +  682.144
  4 21 36 -123 42 26  - 9 48 35                          +  697.264
  4 21 37 -121 31 25  -12 36 49                          +  712.929
  4 21 38 -119 17 51  -15 22 54                          +  729.069
  4 21 39 -117  1  4  -18  6 30                          +  745.609
  4 21 40 -114 40 16  -20 47 16                          +  762.476
  4 21 41 -112 14 42  -23 24 49                          +  779.593
  4 21 42 -109 43 33  -25 58 43                          +  796.885
  4 21 43 -107  5 57  -28 28 33                          +  814.274
  4 21 44 -104 21  3  -30 53 49                          +  831.687
  4 21 45 -101 27 57  -33 14  1                          +  849.048
  4 21 46 - 98 25 43  -35 28 33                          +  866.283
  4 21 47 - 95 13 29  -37 36 47                          +  883.321
  4 21 48 - 91 50 23  -39 38  1                          +  900.092
  4 21 49 - 88 15 43  -41 31 32                          +  916.528
  4 21 50 - 84 28 52  -43 16 29                          +  932.565
  4 21 51 - 80 29 33  -44 52  1                          +  948.140
  4 21 52 - 76 17 42  -46 17 16                          +  963.193
  4 21 53 - 71 53 47  -47 31 20                          +  977.669
  4 21 54 - 67 18 44  -48 33 23                          +  991.515
  4 21 55 - 62 33 58  -49 22 38                          + 1004.682
  4 21 56 - 57 41 33  -49 58 27                          + 1017.123
  4 21 57 - 52 43 56  -50 20 22                          + 1028.796
  4 21 58 - 47 44  3  -50 28  7                          + 1039.664
  4 21 59 - 42 44 53  -50 21 42                          + 1049.689
  4 22  0 - 37 49 27  -50  1 21                          + 1058.843
  4 22  1 - 33  0 30  -49 27 30                          + 1067.096  TWILIGHT
  4 22  2 - 28 20 20  -48 40 48                          + 1074.426  TWILIGHT
  4 22  3 - 23 50 47  -47 42  3                          + 1080.812  TWILIGHT
  4 22  4 - 19 33  6  -46 32  8                          + 1086.237  TWILIGHT
```

4	22	5	-	15	27	59	-45	11	58			+	1090.689	TWILIGHT
4	22	6	-	11	35	41	-43	42	30			+	1094.159	TWILIGHT
4	22	7	-	7	56	6	-42	4	39			+	1096.641	TWILIGHT
4	22	8	-	4	28	46	-40	19	15			+	1098.132	TWILIGHT
4	22	9	-	1	13	5	-38	27	8			+	1098.633	
4	22	10	+	1	51	44	-36	29	0			+	1098.149	
4	22	11	+	4	46	32	-34	25	32			+	1096.688	
4	22	12	+	7	32	10	-32	17	18			+	1094.259	
4	22	13	+	10	9	30	-30	4	50			+	1090.877	
4	22	14	+	12	39	25	-27	48	35			+	1086.558	
4	22	15	+	15	2	44	-25	29	0			+	1081.322	
4	22	16	+	17	20	15	-23	6	25			+	1075.191	
4	22	17	+	19	32	41	-20	41	12			+	1068.189	
4	22	18	+	21	40	46	-18	13	36			+	1060.345	
4	22	19	+	23	45	10	-15	43	56			+	1051.688	
4	22	20	+	25	46	31	-13	12	24			+	1042.250	
4	22	21	+	27	45	26	-10	39	16			+	1032.066	
4	22	22	+	29	42	30	-	8	4	44		+	1021.171	
4	22	23	+	31	38	17	-	5	29	1		+	1009.605	
4	22	24	+	33	33	22	-	2	52	18		+	997.408	
4	22	25	+	35	28	18	-	0	14	48		+	984.623	
4	22	25	5	LONG.			+	35	39	7	PASS NO. 317 +		983.372	
4	22	26	+	37	23	39	+	2	23	17		+	971.292	
4	22	27	+	39	19	58	+	5	1	45		+	957.461	
4	22	28	+	41	17	52	+	7	40	23		+	943.177	
4	22	29	+	43	17	56	+10	18	56			+	928.489	
4	22	30	+	45	20	52	+12	57	9			+	913.444	
4	22	31	+	47	27	18	+15	34	46			+	898.093	
4	22	32	+	49	37	59	+18	11	28			+	882.489	
4	22	33	+	51	53	42	+20	46	55			+	866.682	
4	22	34	+	54	15	19	+23	20	43			+	850.725	
4	22	35	+	56	43	45	+25	52	27			+	834.673	
4	22	36	+	59	20	0	+28	21	36			+	818.579	
4	22	37	+	62	5	8	+30	47	38			+	802.497	
4	22	38	+	65	0	18	+33	9	51			+	786.483	
4	22	39	+	68	6	42	+35	27	33			+	770.592	
4	22	40	+	71	25	36	+37	39	52			+	754.878	
4	22	41	+	74	58	12	+39	45	50			+	739.397	
4	22	42	+	78	45	39	+41	44	23			+	724.204	
4	22	43	+	82	48	58	+43	34	19			+	709.355	
4	22	44	+	87	8	47	+45	14	19			+	694.903	TWILIGHT
4	22	45	+	91	45	21	+46	43	0			+	680.904	TWILIGHT

```
  4 22 46 + 96 38 16  +47 58 54                          +  667.410  TWILIGHT
  4 22 47 +101 46 18  +49  0 36                          +  654.476  TWILIGHT
  4 22 48 +107  7 23  +49 46 49                          +  642.152  TWILIGHT
  4 22 49 +112 38 28  +50 16 25                          +  630.491
  4 22 50 +118 15 47  +50 28 35                          +  619.541
  4 22 51 +123 54 57  +50 22 53                          +  609.351
  4 22 52 +129 31 29  +49 59 16                          +  599.968
  4 22 53 +135  1  9  +49 18 10                          +  591.435
TOKAWA 108  4 22 53 26.009  N77.3457   1731.913    SE
  4 22 54 +140 20 18  +48 20 19                          +  583.794
  4 22 55 +145 26  7  +47  6 47                          +  577.085
  4 22 56 +150 16 43  +45 38 50                          +  571.344
  4 22 57 +154 51  8  +43 57 48                          +  566.605
  4 22 58 +159  9  5  +42  5  6                          +  562.896
  4 22 59 +163 10 58  +40  2  5                          +  560.244
  4 23  0 +166 57 32  +37 50  2                          +  558.670
  4 23  1 +170 29 49  +35 30  9                          +  558.189
  4 23  2 +173 49  3  +33  3 29                          +  558.815
  4 23  3 +176 56 28  +30 31  3                          +  560.554
  4 23  4 +179 53 21  +27 53 42                          +  563.407
  4 23  5 -177 19  6  +25 12 14                          +  567.370
  4 23  6 -174 39 44  +22 27 21                          +  572.434
BSANDS 100  4 23  6  8.968  W76.6452   1659.388    SE        **
  4 23  7 -172  7 25  +19 39 40                          +  578.583
  4 23  8 -169 41  8  +16 49 47                          +  585.795
  4 23  9 -167 19 58  +13 58 12                          +  594.044
  4 23 10 -165  3  0  +11  5 24                          +  603.298
  4 23 11 -162 49 24  + 8 11 48                          +  613.516
  4 23 12 -160 38 22  + 5 17 50                          +  624.657
BSANDS 100  4 23 12 23.444  582.1985   2158.676    SE
  4 23 13 -158 29 11  + 2 23 51                          +  636.672
  4 23 14 -156 21  7  - 0 29 45                          +  649.507
  4 23 15 -154 13 27  - 3 22 39                          +  663.104
  4 23 16 -152  5 32  - 6 14 30                          +  677.403
  4 23 17 -149 56 39  - 9  4 59                          +  692.337
  4 23 18 -147 46  6  -11 53 45                          +  707.840
  4 23 19 -145 33 14  -14 40 28                          +  723.839
  4 23 20 -143 17 18  -17 24 47                          +  740.263
  4 23 21 -140 57 34  -20  6 22                          +  757.036
  4 23 22 -138 33 14  -22 44 49                          +  774.084
  4 23 23 -136  3 32  -25 19 45                          +  791.330
  4 23 24 -133 27 37  -27 50 42                          +  808.699
```

```
  4 23 25 -130 44 38   -30 17 14                          +  826.113
  4 23 26 -127 53 38   -32 38 49                          +  843.499
  4 23 27 -124 53 45   -34 54 54                          +  860.783
  4 23 28 -121 44  4   -37  4 50                          +  877.891
  4 23 29 -118 23 44   -39  7 58                          +  894.754
  4 23 30 -114 52  0   -41  3 32                          +  911.304
  4 23 31 -111  8 13   -42 50 46                          +  927.473
  4 23 32 -107 11 58   -44 28 48                          +  943.201
  4 23 33 -103  3 12   -45 56 45                          +  958.425
  4 23 34 - 98 42 13   -47 13 45                          +  973.089
  4 23 35 - 94  9 46   -48 18 55                          +  987.140
  4 23 36 - 89 27 12   -49 11 29                          + 1000.526
  4 23 37 - 84 36 24   -49 50 44                          + 1013.201
  4 23 38 - 79 39 47   -50 16 11                          + 1025.121
  4 23 39 - 74 40  7   -50 27 31                          + 1036.248
  4 23 40 - 69 40 25   -50 24 38                          + 1046.543
  4 23 41 - 64 43 43   -50  7 44                          + 1055.976
  4 23 42 - 59 52 51   -49 37 13                          + 1064.518  TWILIGHT
  4 23 43 - 55 10 16   -48 53 40                          + 1072.143  TWILIGHT
  4 23 44 - 50 37 53   -47 57 50                          + 1078.831  TWILIGHT
  4 23 45 - 46 17  6   -46 50 37                          + 1084.564  TWILIGHT
  4 23 46 - 42  8 46   -45 32 55                          + 1089.327  TWILIGHT
  4 23 47 - 38 13 15   -44  5 41                          + 1093.111  TWILIGHT
  4 23 48 - 34 30 29   -42 29 50                          + 1095.909  TWILIGHT
  4 23 49 - 31  0  8   -40 46 15                          + 1097.718  TWILIGHT
  4 23 50 - 27 41 36   -38 55 44                          + 1098.536  TWILIGHT
  4 23 51 - 24 34  8   -36 59  2                          + 1098.368
  4 23 52 - 21 36 56   -34 56 51                          + 1097.221
  4 23 53 - 18 49  7   -32 49 45                          + 1095.103
  4 23 54 - 16  9 47   -30 38 18                          + 1092.027
  4 23 55 - 13 38  6   -28 22 59                          + 1088.010
  4 23 56 - 11 13 13   -26  4 12                          + 1083.069
  4 23 57 -  8 54 20   -23 42 21                          + 1077.226
  4 23 58 -  6 40 43   -21 17 47                          + 1070.505
  4 23 59 -  4 31 37   -18 50 46                          + 1062.933
  5  0  0 -  2 26 23   -16 21 37                          + 1054.539
  5  0  1 -  0 24 22   -13 50 34                          + 1045.353
SANANA 116  5  0  1 11.912  563.6079   1899.877    NE
  5  0  2 +  1 35  5   -11 17 50                          + 1035.410
  5  0  3 +  3 32 32   - 8 43 40                          + 1024.746
  5  0  4 +  5 28 33   - 6  8 15                          + 1013.398
  5  0  5 +  7 23 45   - 3 31 49                          + 1001.405
```

```
  5  0  6 +  9 18 37  - 0 54 32                          +  988.810
SANANA 116  5  0  6 20.614  E55.5890   1545.082    NE        **
   5  0  6 20  LONG.   +  9 58 25  PASS NO.  318 +  984.263
  5  0  7 + 11 13 47  + 1 43 24                          +  975.656
  5  0  8 + 13  9 46  + 4 21 45                          +  961.987
  5  0  9 + 15  7 10  + 7  0 18                          +  947.850
  5  0 10 + 17  6 36  + 9 38 51                          +  933.291
  5  0 11 + 19  8 42  +12 17  8                          +  918.361
  5  0 12 + 21 14  8  +14 54 53                          +  903.108
  5  0 13 + 23 23 37  +17 31 48                          +  887.584
  5  0 14 + 25 37 56  +20  7 33                          +  871.840
  5  0 15 + 27 57 56  +22 41 46                          +  855.929
  5  0 16 + 30 24 29  +25 14  1                          +  839.905
  5  0 17 + 32 58 35  +27 43 50                          +  823.820
  5  0 18 + 35 41 17  +30 10 40                          +  807.730
  5  0 19 + 38 33 43  +32 33 53                          +  791.688
  5  0 20 + 41 37  4  +34 52 46                          +  775.751
  5  0 21 + 44 52 35  +37  6 31                          +  759.973
  5  0 22 + 48 21 29  +39 14 10                          +  744.409
  5  0 23 + 52  4 57  +41 14 42                          +  729.115
  5  0 24 + 56  4  2  +43  6 57                          +  714.145
  5  0 25 + 60 19 29  +44 49 36                          +  699.556  TWILIGHT
  5  0 26 + 64 51 40  +46 21 18                          +  685.400  TWILIGHT
  5  0 27 + 69 40 22  +47 40 37                          +  671.733  TWILIGHT
  5  0 28 + 74 44 35  +48 46  6                          +  658.607  TWILIGHT
  5  0 29 + 80  2 28  +49 36 26                          +  646.075  TWILIGHT
  5  0 30 + 85 31 14  +50 10 24                          +  634.188  TWILIGHT
  5  0 31 + 91  7 16  +50 27  8                          +  622.998
  5  0 32 + 96 46 19  +50 26  5                          +  612.551
  5  0 33 +102 23 54  +50  7  6                          +  602.897
  5  0 34 +107 55 41  +49 30 28                          +  594.078
  5  0 35 +113 17 49  +48 36 53                          +  586.139
  5  0 36 +118 27 16  +47 27 19                          +  579.120
  5  0 37 +123 21 55  +46  2 59                          +  573.059
  5  0 38 +128  0 34  +44 25 14                          +  567.988
  5  0 39 +132 22 46  +42 35 27                          +  563.940
  5  0 40 +136 28 45  +40 34 59                          +  560.942
TOKAWA 108  5  0 40 13.339  N50.0758    827.731    SE
  5  0 41 +140 19 12  +38 25 10                          +  559.015
  5  0 42 +143 55  6  +36  7 12                          +  558.178
TOKAWA 108  5  0 42 32.096  E58.5769    974.705    SE        **
  5  0 43 +147 17 37  +33 42 12                          +  558.445
```

//

```
  5   0 44 +150 27 59   +31 11 11                          +   559.825
  5   0 45 +153 27 29   +28 35  1                          +   562.319
  5   0 46 +156 17 21   +25 54 32                          +   565.926
  5   0 47 +158 58 46   +23 10 27                          +   570.639
  5   0 48 +161 32 50   +20 23 26                          +   576.443
  5   0 49 +164  0 36   +17 34  3                          +   583.318
  5   0 50 +166 23  2   +14 42 50                          +   591.241
  5   0 51 +168 41  2   +11 50 16                          +   600.179
  5   0 52 +170 55 28   + 8 56 48                          +   610.096
  5   0 53 +173  7  7   + 6  2 51                          +   620.950
  5   0 54 +175 16 45   + 3  8 49                          +   632.694
  5   0 55 +177 25  3   + 0 15  2                          +   645.276
  5   0 56 +179 32 48   - 2 38  8                          +   658.640
  5   0 57 -178 19 23   - 5 30 20                          +   672.725
  5   0 58 -176 10 45   - 8 21 14                          +   687.468
  5   0 59 -174  0 41   -11 10 31                          +   702.800
  5   1  0 -171 48 26   -13 57 50                          +   718.651
SAMOAI 114  5  1  0 29.154  S 9.3440     735.276     SE
SAMOAI 114  5  1  0  7.772  W 7.6383     726.540     SE         **
  5   1  1 -169 33 18   -16 42 52                          +   734.951
  5   1  2 -167 14 34   -19 25 14                          +   751.623
  5   1  3 -164 51 27   -22  4 34                          +   768.594
  5   1  4 -162 23 10   -24 40 29                          +   785.787
  5   1  5 -159 48 52   -27 12 33                          +   803.126
  5   1  6 -157  7 42   -29 40 19                          +   820.536
  5   1  7 -154 18 46   -32  3 15                          +   837.940
  5   1  8 -151 21 10   -34 20 50                          +   855.265
  5   1  9 -148 14  0   -36 32 26                          +   872.437
  5   1 10 -144 56 23   -38 37 24                          +   889.385
  5   1 11 -141 27 33   -40 35  0                          +   906.041
  5   1 12 -137 46 47   -42 24 27                          +   922.338
  5   1 13 -133 53 39   -44  4 55                          +   938.212
  5   1 14 -129 47 58   -45 35 32                          +   953.601
  5   1 15 -125 29 55   -46 55 24                          +   968.448
  5   1 16 -121  0 11   -48  3 39                          +   982.698
  5   1 17 -116 19 56   -48 59 28                          +   996.299
  5   1 18 -111 30 56   -49 42  9                          +  1009.204
  5   1 19 -106 35 27   -50 11  7                          +  1021.367
  5   1 20 -101 36 12   -50 26  0                          +  1032.748
  5   1 21  - 96 36 10   -50 26 41                         +  1043.310
  5   1 22  - 91 38 23   -50 13 17                         +  1053.020
  5   1 23  - 86 45 45   -49 46  7                         +  1061.847
```

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  5   1 24 - 82   0 50   -49   5 45                          + 1069.766  TWILIGHT
  5   1 25 - 77  25 42   -48  12 55                          + 1076.753  TWILIGHT
  5   1 26 - 73   1 53   -47   8 27                          + 1082.792  TWILIGHT
  5   1 27 - 68  50 21   -45  53 17                          + 1087.866  TWILIGHT
  5   1 28 - 64  51 36   -44  28 20                          + 1091.963  TWILIGHT
  5   1 29 - 61   5 40   -42  54 33                          + 1095.077  TWILIGHT
  5   1 30 - 57  32 15   -41  12 49                          + 1097.202  TWILIGHT
  5   1 31 - 54  10 49   -39  23 57                          + 1098.338  TWILIGHT
  5   1 32 - 51   0 40   -37  28 44                          + 1098.486
  5   1 33 - 48   0 59   -35  27 51                          + 1097.653
  5   1 34 - 45  10 54   -33  21 56                          + 1095.846
  5   1 35 - 42  29 32   -31  11 32                          + 1093.078
  5   1 36 - 39  56  2   -28  57  8                          + 1089.364
  5   1 37 - 37  29 32   -26  39 12                          + 1084.720
  5   1 38 - 35   9 15   -24  18  6                          + 1079.168
  5   1 39 - 32  54 24   -21  54 12                          + 1072.731
  5   1 40 - 30  44 16   -19  27 47                          + 1065.434
  5   1 41 - 28  38  8   -16  59 10                          + 1057.305
  5   1 42 - 26  35 23   -14  28 36                          + 1048.375
  5   1 43 - 24  35 22   -11  56 18                          + 1038.677
  5   1 44 - 22  37 30   - 9  22 30                          + 1028.246
  5   1 45 - 20  41 12   - 6  47 25                          + 1017.119
  5   1 46 - 18  45 53   - 4  11 15                          + 1005.336
  5   1 47 - 16  51  1   - 1  34 11                          +  992.936
SANANA 116   5   1 47 35.717   W70.3931    2116.498     NE          **
   5   1 47 35   LONG.   - 15 42 18   PASS NO.   319 +   985.184
  5   1 48 - 14  56  1   + 1   3 33                          +  979.963
  5   1 49 - 13   0 20   + 3  41 46                          +  966.461
  5   1 50 - 11   3 23   + 6  20 15                          +  952.474
  5   1 51 -  9   4 33   + 8  58 47                          +  938.052
  5   1 52 -  7   3 14   +11  37  6                          +  923.241
  5   1 53 -  4  58 45   +14  14 58                          +  908.092
  5   1 54 -  2  50 24   +16  52  5                          +  892.654
  5   1 55 -  0  37 26   +19  28  7                          +  876.979
SANANA 116   5   1 55 16.257   N80.1672    2522.398     NE
  5   1 56 +  1  40 59   +22   2 43                          +  861.120
  5   1 57 +  4   5 44   +24  35 28                          +  845.128
  5   1 58 +  6  37 45   +27   5 54                          +  829.059
HOLBRG 101   5   1 58 47.050   S81.6491    2526.173     NE
  5   1 59 +  9  18  6   +29  33 30                          +  812.966
  5   2  0 + 12   7 53   +31  57 40                          +  796.904
  5   2  1 + 15   8 16   +34  17 41                          +  780.927
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  5   2   2 + 18 20 29   +36 32 47                          +   765.090
  5   2   3 + 21 45 46   +38 42  4                          +   749.450
  5   2   4 + 25 25 19   +40 44 30                          +   734.060
  5   2   5 + 29 20 14   +42 38 57                          +   718.977
  5   2   6 + 33 31 21   +44 24 10                          +   704.255  TWILIGHT
  5   2   7 + 37 59  8   +45 58 48                          +   689.950  TWILIGHT
  5   2   8 + 42 43 33   +47 21 25                          +   676.114  TWILIGHT
  5   2   9 + 47 43 50   +48 30 36                          +   662.803  TWILIGHT
  5   2  10 + 52 58 21   +49 24 57                          +   650.068  TWILIGHT
  5   2  11 + 58 24 32   +50  3 14                          +   637.962  TWILIGHT
  5   2  12 + 63 59  0   +50 24 30                          +   626.535
  5   2  13 + 69 37 37   +50 28  4                          +   615.838
  5   2  14 + 75 15 58   +50 13 44                          +   605.916
  5   2  15 + 80 49 35   +49 41 38                          +   596.817
  5   2  16 + 86 14 29   +48 52 22                          +   588.584
  5   2  17 + 91 27 26   +47 46 51                          +   581.258
  5   2  18 + 96 26  3   +46 26 14                          +   574.879
  5   2  19 +101  8 54   +44 51 51                          +   569.481
  5   2  20 +105 35 22   +43  5  3                          +   565.096
  5   2  21 +109 45 30   +41  7 15                          +   561.752
  5   2  22 +113 39 53   +38 59 45                          +   559.475
  5   2  23 +117 19 28   +36 43 48                          +   558.283
TOKAWA 108  5  2 23 47.652  W78.4865   1736.012     SE          **
  5   2  24 +120 45 20   +34 20 31                          +   558.192
  5   2  25 +123 58 45   +31 50 58                          +   559.211
  5   2  26 +127  0 58   +29 16  3                          +   561.347
  5   2  27 +129 53 14   +26 36 36                          +   564.597
  5   2  28 +132 36 46   +23 53 23                          +   568.956
  5   2  29 +135 12 39   +21  7  2                          +   574.413
TOKAWA 108  5  2 29 51.622  S80.9556   1951.178     SE
  5   2  30 +137 41 59   +18 18 11                          +   580.949
  5   2  31 +140  5 44   +15 27 22                          +   588.541
  5   2  32 +142 24 50   +12 35  5                          +   597.160
  5   2  33 +144 40  8   + 9 41 47                          +   606.770
  5   2  34 +146 52 27   + 6 47 54                          +   617.332
  5   2  35 +149  2 33   + 3 53 48                          +   628.800
  5   2  36 +151 11 11   + 0 59 53                          +   641.124
  5   2  37 +153 19  2   - 1 53 31                          +   654.248
  5   2  38 +155 26 49   - 4 46  2                          +   668.113
  5   2  39 +157 35 12   - 7 37 21                          +   682.656
  5   2  40 +159 44 52   -10 27  8                          +   697.811
  5   2  41 +161 56 32   -13 15  3                          +   713.508
```

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  5   2 42 +164 10 54   -16  0 44                          +  729.675
  5   2 43 +166 28 41   -18 43 52                          +  746.240
  5   2 44 +168 50 39   -21 24  4                          +  763.126
  5   2 45 +171 17 35   -24  0 57                          +  780.258
  5   2 46 +173 50 20   -26 34  6                          +  797.561
  5   2 47 +176 29 43   -29  3  3                          +  814.958
  5   2 48 +179 16 38   -31 27 19                          +  832.373
  5   2 49 -177 48  0   -33 46 21                          +  849.731
  5   2 50 -174 43 18   -35 59 35                          +  866.960
  5   2 51 -171 28 21   -38  6 20                          +  883.988
  5   2 52 -168  2 22   -40  5 55                          +  900.743
  5   2 53 -164 24 36   -41 57 32                          +  917.161
  5   2 54 -160 34 33   -43 40 24                          +  933.175
  5   2 55 -156 31 59   -45 13 37                          +  948.724
  5   2 56 -152 16 56   -46 36 18                          +  963.748
  5   2 57 -147 49 58   -47 47 35                          +  978.192
  5   2 58 -143 12  9   -48 46 38                          +  992.003
  5   2 59 -138 25  5   -49 32 41                          + 1005.132
  5   3  0 -133 30 55   -50  5  8                          + 1017.534
  5   3  1 -128 32 17   -50 23 36                          + 1029.167
  5   3  2 -123 32  5   -50 27 51                          + 1039.992
  5   3  3 -118 33 24   -50 17 57                          + 1049.975
  5   3  4 -113 39 10   -49 54 11                          + 1059.084
  5   3  5 -108 52  3   -49 17  4                          + 1067.294  TWILIGHT
  5   3  6 -104 14 15   -48 27 16                          + 1074.580  TWILIGHT
  5   3  7 - 99 47 27   -47 25 37                          + 1080.922  TWILIGHT
  5   3  8 - 95 32 46   -46 13  2                          + 1086.304  TWILIGHT
  5   3  9 - 91 30 46   -44 50 26                          + 1090.714  TWILIGHT
  5   3 10 - 87 41 38   -43 18 46                          + 1094.143  TWILIGHT
  5   3 11 - 84  5  7   -41 38 56                          + 1096.584  TWILIGHT
  5   3 12 - 80 40 45   -39 51 46                          + 1098.037  TWILIGHT
  5   3 13 - 77 27 51   -37 58  4                          + 1098.502
  5   3 14 - 74 25 37   -35 58 32                          + 1097.984
  5   3 15 - 71 33 13   -33 53 50                          + 1096.490
AGASTA 123  5  3 15 27.651  S50.2797    1560.931    NE
SNTAGO 122  5  3 15 18.999  S 0.4216    1095.147    NE
SNTAGO 122  5  3 15 20.915  E 0.4684    1095.080    NE          **
  5   3 16 - 68 49 46   -31 44 30                          + 1094.031
  5   3 17 - 66 14 23   -29 31  4                          + 1090.621
  5   3 18 - 63 46 14   -27 13 59                          + 1086.276
  5   3 19 - 61 24 29   -24 53 40                          + 1081.017
AGASTA 123  5  3 19 31.939  E50.6864    1547.741    NE          **
```

```
  5   3 20 - 59  8 21   -22 30 26                          + 1074.865
  5   3 21 - 56 57  7   -20  4 39                          + 1067.845
  5   3 22 - 54 50  5   -17 36 35                          + 1059.985
  5   3 23 - 52 46 34   -15  6 30                          + 1051.314
  5   3 24 - 50 45 57   -12 34 38                          + 1041.864
  5   3 25 - 48 47 37   -10  1 14                          + 1031.671
  5   3 26 - 46 51  0   - 7 26 29                          + 1020.770
  5   3 27 - 44 55 31   - 4 50 36                          + 1009.199
  5   3 28 - 43  0 38   - 2 13 47                          +  996.999
   5   3 28 50  LONG.   - 41 23  3  PASS NO.   320 +   986.138
  5   3 29 - 41  5 45   + 0 23 46                          +  984.211
  5   3 30 - 39 10 19   + 3  1 51                          +  970.880
  5   3 31 - 37 13 47   + 5 40 14                          +  957.051
  5   3 32 - 35 15 31   + 8 18 44                          +  942.769
  5   3 33 - 33 14 56   +10 57  5                          +  928.083
  5   3 34 - 31 11 21   +13 35  3                          +  913.042
  5   3 35 - 29  4  5   +16 12 20                          +  897.696
  5   3 36 - 26 52 25   +18 48 37                          +  882.096
  5   3 37 - 24 35 31   +21 23 34                          +  866.294
  5   3 38 - 22 12 31   +23 56 47                          +  850.342
  5   3 39 - 19 42 30   +26 27 49                          +  834.295
  5   3 40 - 17  4 25   +28 56  9                          +  818.205
  5   3 41 - 14 17 13   +31 21 12                          +  802.127
  5   3 42 - 11 19 43   +33 42 19                          +  786.117
  5   3 43 -  8 10 43   +35 58 42                          +  770.229
  5   3 44 -  4 48 58   +38  9 32                          +  754.517
  5   3 45 -  1 13 15   +40 13 47                          +  739.039
  5   3 46 +  2 37 33   +42 10 22                          +  723.848
  5   3 47 +  6 44 22   +43 58  3                          +  709.001
HOLBRG 101   5   3 47 27.409   S40.4018     890.564     NE
  5   3 48 + 11  7 46   +45 35 31                          +  694.551  TWILIGHT
  5   3 49 + 15 47 53   +47  1 21                          +  680.553  TWILIGHT
HOLBRG 101   5   3 51 14.208   E71.2236    1544.388     NE        **
  5   3 50 + 20 44  6   +48 14  7                          +  667.062  TWILIGHT
  5   3 51 + 25 55  4   +49 12 24                          +  654.130  TWILIGHT
  5   3 52 + 31 18 27   +49 54 56                          +  641.810  TWILIGHT
  5   3 53 + 36 51  4   +50 20 40                          +  630.152
  5   3 54 + 42 28 58   +50 28 52                          +  619.208
  5   3 55 + 48  7 44   +50 19 10                          +  609.024
  5   3 56 + 53 42 56   +49 51 38                          +  599.649
  5   3 57 + 59 10 24   +49  6 45                          +  591.126
  5   3 58 + 64 26 40   +48  5 22                          +  583.498
```

HOLBRG 101 5 3 56 39.121 E73.0163 2817.158 SE **

5	3	59	+	69	29	9	+46	48	33	+	576.804
5	4	0	+	74	16	9	+45	17	37	+	571.081
5	4	1	+	78	46	52	+43	33	55	+	566.362
5	4	2	+	83	1	12	+41	38	51	+	562.676
5	4	3	+	86	59	36	+39	33	45	+	560.049
5	4	4	+	90	42	55	+37	19	53	+	558.503
5	4	5	+	94	12	14	+34	58	25	+	558.054
5	4	6	+	97	28	46	+32	30	23	+	558.714
5	4	7	+	100	33	47	+29	56	46	+	560.490
5	4	8	+	103	28	32	+27	18	25	+	563.382
5	4	9	+	106	14	14	+24	36	6	+	567.387
5	4	10	+	108	52	1	+21	50	29	+	572.493
5	4	11	+	111	22	58	+19	2	13	+	578.687
5	4	12	+	113	48	6	+16	11	50	+	585.945
5	4	13	+	116	8	20	+13	19	52	+	594.241
5	4	14	+	118	24	34	+10	26	45	+	603.541
5	4	15	+	120	37	37	+ 7	32	56	+	613.806
5	4	16	+	122	48	15	+ 4	38	49	+	624.993
5	4	17	+	124	57	14	+ 1	44	47	+	637.052
5	4	18	+	127	5	15	- 1	8	49	+	649.930
5	4	19	+	129	13	1	- 4	1	39	+	663.568
5	4	20	+	131	21	13	- 6	53	21	+	677.906
5	4	21	+	133	30	32	- 9	43	36	+	692.876
5	4	22	+	135	41	40	-12	32	4	+	708.410
5	4	23	+	137	55	18	-15	18	25	+	724.439
5	4	24	+	140	12	11	-18	2	18	+	740.887
5	4	25	+	142	33	3	-20	43	20	+	757.682
5	4	26	+	144	58	42	-23	21	9	+	774.746
5	4	27	+	147	29	56	-25	55	20	+	792.005
5	4	28	+	150	7	35	-28	25	27	+	809.382
5	4	29	+	152	52	33	-30	51	0	+	826.800
5	4	30	+	155	45	44	-33	11	29	+	844.185
5	4	31	+	158	48	2	-35	26	17	+	861.463
5	4	32	+	162	0	22	-37	34	47	+	878.562
5	4	33	+	165	23	33	-39	36	18	+	895.411
5	4	34	+	168	58	20	-41	30	3	+	911.943
5	4	35	+	172	45	18	-43	15	15	+	928.091
5	4	36	+	176	44	47	-44	51	1	+	943.793
5	4	37	-	179	3	13	-46	16	28	+	958.989
5	4	38	-	174	39	7	-47	30	44	+	973.622
5	4	39	-	170	3	50	-48	32	57	+	987.639

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  5   4 40 -165 18 50   -49 22 21                          + 1000.988
  5   4 41 -160 26  9   -49 58 17                          + 1013.625
  5   4 42 -155 28 18   -50 20 18                          + 1025.505
  5   4 43 -150 28  8   -50 28  7                          + 1036.589
  5   4 44 -145 28 43   -50 21 45                          + 1046.842
  5   4 45 -140 33  3   -50  1 25                          + 1056.231
  5   4 46 -135 43 52   -49 27 35                          + 1064.729  TWILIGHT
  5   4 47 -131  3 31   -48 40 53                          + 1072.310  TWILIGHT
  5   4 48 -126 33 49   -47 42  7                          + 1078.954  TWILIGHT
  5   4 49 -122 15 59   -46 32 10                          + 1084.644  TWILIGHT
  5   4 50 -118 10 45   -45 11 58                          + 1089.365  TWILIGHT
  5   4 51 -114 18 23   -43 42 29                          + 1093.108  TWILIGHT
  5   4 52 -110 38 44   -42  4 36                          + 1095.865  TWILIGHT
  5   4 53 -107 11 23   -40 19 11                          + 1097.635  TWILIGHT
  5   4 54 -103 55 40   -38 27  2                          + 1098.417  TWILIGHT
  5   4 55 -100 50 52   -36 28 54                          + 1098.213
  5   4 56 - 97 56  5   -34 25 26                          + 1097.032
  5   4 57 - 95 10 30   -32 17 13                          + 1094.884
  5   4 58 - 92 33 11   -30  4 46                          + 1091.779
  5   4 59 - 90  3 19   -27 48 34                          + 1087.735
  5   5  0 - 87 40  3   -25 29  2                          + 1082.771
  5   5  1 - 85 22 36   -23  6 31                          + 1076.907
  5   5  2 - 83 10 14   -20 41 22                          + 1070.167
  5   5  3 - 81  2 13   -18 13 51                          + 1062.578
  5   5  4 - 78 57 55   -15 44 17                          + 1054.169
LIMAPU 124   5   5   4 53.637   S11.8668    1065.456     NE
  5   5  5 - 76 56 39   -13 12 52                          + 1044.972
LIMAPU 124   5   5   5 33.702    E 9.1865    1051.004     NE        **
  5   5  6 - 74 57 50   -10 39 51                          + 1035.019
  5   5  7 - 73  0 52    - 8  5 27                          + 1024.347
  5   5  8 - 71  5 11    - 5 29 52                          + 1012.993
  5   5  9 - 69 10 14    - 2 53 18                          + 1000.997
QUITOE 125   5   5   9 51.586   E58.9676    1648.698     NE        **
  5   5 10 - 67 15 25    - 0 15 58                          +  988.400
   5   5 10   6  LONG.    - 67  3 44   PASS NO.   321 +   987.068
  5   5 11 - 65 20 13    + 2 21 58                          +  975.245
  5   5 12 - 63 24  3    + 5  0 15                          +  961.577
PANTIG 120   5   5  12 49.482   S56.3266    1515.102     NE
  5   5 13 - 61 26 19    + 7 38 42                          +  947.441
  5   5 14 - 59 26 25    +10 17  4                          +  932.885
  5   5 15 - 57 23 42    +12 55  7                          +  917.958
  5   5 16 - 55 17 29    +15 32 33                          +  902.710
```

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PANTIG 120  5  5 16 36.611   E48.6224    1258.243     NE        **
  5  5 17 - 53  7  3  +18  9  4                        +  887.190
  5  5 18 - 50 51 36  +20 44 21                        +  871.451
  5  5 19 - 48 30 17  +23 18  0                        +  855.544
  5  5 20 - 46  2 11  +25 49 35                        +  839.524
  5  5 21 - 43 26 19  +28 18 36                        +  823.444
  5  5 22 - 40 41 37  +30 44 31                        +  807.358
  5  5 23 - 37 46 55  +33  6 39                        +  791.320
  5  5 24 - 34 41  2  +35 24 17                        +  775.386
  5  5 25 - 31 22 44  +37 36 35                        +  759.610
  5  5 26 - 27 50 47  +39 42 35                        +  744.049
  5  5 27 - 24  4  1  +41 41 13                        +  728.757
  5  5 28 - 20  1 28  +43 31 17                        +  713.789
  5  5 29 - 15 42 26  +45 11 29                        +  699.201  TWILIGHT
  5  5 30 - 11  6 41  +46 40 25                        +  685.047  TWILIGHT
HOLBRG 101  5  5 32 29.826   W42.5460     852.097     NE        **
  5  5 31 -  6 14 36  +47 56 40                        +  671.382  TWILIGHT
  5  5 32 -  1  7 20  +48 58 48                        +  658.258  TWILIGHT
  5  5 33 +  4 13  2  +49 45 31                        +  645.729  TWILIGHT
HOLBRG 101  5  5 33 48.968   N 8.5029     641.820     NE
  5  5 34 +  9 43 32  +50 15 40                        +  633.846  TWILIGHT
  5  5 35 + 15 20 25  +50 28 27                        +  622.661
  5  5 36 + 20 59 19  +50 23 24                        +  612.220
  5  5 37 + 26 35 48  +50  0 28                        +  602.573
  5  5 38 + 32  5 35  +49 20  1                        +  593.765
  5  5 39 + 37 25  0  +48 22 49                        +  585.838
  5  5 40 + 42 31 13  +47  9 54                        +  578.833
  5  5 41 + 47 22 19  +45 42 31                        +  572.788
  5  5 42 + 51 57 17  +44  2  1                        +  567.737
  5  5 43 + 56 15 49  +42  9 46                        +  563.711
  5  5 44 + 60 18 17  +40  7 10                        +  560.737
  5  5 45 + 64  5 25  +37 55 27                        +  558.839
  5  5 46 + 67 38 16  +35 35 51                        +  558.033
  5  5 47 + 70 58  0  +33  9 26                        +  558.333
  5  5 48 + 74  5 54  +30 37 11                        +  559.749
  5  5 49 + 77  3 13  +27 59 59                        +  562.282
  5  5 50 + 79 51 10  +25 18 36                        +  565.930
  5  5 51 + 82 30 55  +22 33 46                        +  570.686
  5  5 52 + 85  3 33  +19 46  7                        +  576.534
  5  5 53 + 87 30  8  +16 56 12                        +  583.455
  5  5 54 + 89 51 35  +14  4 34                        +  591.424
  5  5 55 + 92  8 48  +11 11 41                        +  600.409
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  5   5 56 + 94 22 37   + 8 17 59                          +  610.372
  5   5 57 + 96 33 50   + 5 23 52                          +  621.273
  5   5 58 + 98 43 12   + 2 29 44                          +  633.062
  5   5 59 +100 51 26   - 0 24  3                          +  645.688
  5   6  0 +102 59 14   - 3 17  9                          +  659.093
  5   6  1 +105  7 17   - 6  9 14                          +  673.218
  5   6  2 +107 16 18   - 8 59 56                          +  687.997
  5   6  3 +109 26 56   -11 48 56                          +  703.362
  5   6  4 +111 39 54   -14 35 55                          +  719.244
  5   6  5 +113 55 56   -17 20 30                          +  735.569
  5   6  6 +116 15 45   -20  2 21                          +  752.264
  5   6  7 +118 40  8   -22 41  5                          +  769.253
  5   6  8 +121  9 55   -25 16 17                          +  786.460
  5   6  9 +123 45 53   -27 47 32                          +  803.809
  5   6 10 +126 28 58   -30 14 21                          +  821.223
OOMERA 119  5  6 10 21.503  W52.7815   1253.087    SE          **
  5   6 11 +129 20  1   -32 36 13                          +  838.628
  5   6 12 +132 19 59   -34 52 34                          +  855.948
  5   6 13 +135 29 45   -37  2 46                          +  873.112
OOMERA 119  5  6 13 23.272  S45.6847   1187.365    SE
  5   6 14 +138 50 10   -39  6 10                          +  890.048
  5   6 15 +142 22  1   -41  2  0                          +  906.687
  5   6 16 +146  5 55   -42 49 28                          +  922.964
  5   6 17 +150  2 18   -44 27 44                          +  938.813
  5   6 18 +154 11 14   -45 55 54                          +  954.175
  5   6 19 +158 32 25   -47 13  6                          +  968.991
  5   6 20 +163  5  5   -48 18 27                          +  983.208
  5   6 21 +167 47 53   -49 11  9                          +  996.773
  5   6 22 +172 38 55   -49 50 33                          + 1009.639
  5   6 23 +177 35 48   -50 16  5                          + 1021.763
  5   6 24 -177 24 16   -50 27 30                          + 1033.103
  5   6 25 -172 24 19   -50 24 41                          + 1043.623
  5   6 26 -167 27 22   -50  7 49                          + 1053.289
  5   6 27 -162 36 17   -49 37 18                          + 1062.072
  5   6 28 -157 53 28   -48 53 44                          + 1069.946  TWILIGHT
  5   6 29 -153 20 55   -47 57 54                          + 1076.890  TWILIGHT
  5   6 30 -149  0  0   -46 50 39                          + 1082.885  TWILIGHT
  5   6 31 -144 51 33   -45 32 56                          + 1087.916  TWILIGHT
  5   6 32 -140 55 57   -44  5 40                          + 1091.972  TWILIGHT
  5   6 33 -137 13  8   -42 29 47                          + 1095.045  TWILIGHT
  5   6 34 -133 42 45   -40 46 10                          + 1097.131  TWILIGHT
  5   6 35 -130 24 12   -38 55 38                          + 1098.229  TWILIGHT
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   5   6 36 -127 16 44   -36 58 56                                  +  1098.342
   5   6 37 -124 19 32   -34 56 44                                  +  1097.475
   5   6 38 -121 31 45   -32 49 39                                  +  1095.637
   5   6 39 -118 52 27   -30 38 14                                  +  1092.839
   5   6 40 -116 20 48   -28 22 56                                  +  1089.098
   5   6 41 -113 55 58   -26  4 12                                  +  1084.430
   5   6 42 -111 37 10   -23 42 25                                  +  1078.856
   5   6 43 -109 23 37   -21 17 54                                  +  1072.398
   5   6 44 -107 14 36   -18 50 59                                  +  1065.084
   5   6 45 -105  9 26   -16 21 55                                  +  1056.940
   5   6 46 -103  7 29   -13 50 58                                  +  1047.998
   5   6 47 -101  8  8   -11 18 22                                  +  1038.289
   5   6 48 - 99 10 47   - 8 44 19                                  +  1027.850
   5   6 49 - 97 14 52   - 6  9  3                                  +  1016.717
   5   6 50 - 95 19 48   - 3 32 45                                  +  1004.929
   5   6 51 - 93 25  3   - 0 55 38                                  +   992.527
    5   6 51 21  LONG.   - 92 44 26  PASS NO.   322 +   987.947
   5   6 52 - 91 30  2   + 1 42  8                                  +   979.553
   5   6 53 - 89 34 12   + 4 20 19                                  +   966.050
   5   6 54 - 87 36 57   + 6 58 42                                  +   952.066
2RSTON  99  5   6 54 28.666  S86.7735   3251.306     NE
   5   6 55 - 85 37 41   + 9 37  4                                  +   937.646
   5   6 56 - 83 35 47   +12 15 10                                  +   922.838
   5   6 57 - 81 30 34   +14 52 44                                  +   907.692
CPCAN1 107  5   6 57 25.511  S64.3895   1703.745     NE
   5   6 58 - 79 21 19   +17 29 28                                  +   892.258
BELVOR 113  5   6 58 59.547  S77.8494   2363.753     NE
PNSTAT  96  5   6 58 40.040  S81.9899   2687.282     NE
   5   6 59 - 77  7 15   +20  5  3                                  +   876.588
PDRSPG 117  5   6 59 41.446  S68.1841   1801.035     NE
ABDEEN 112  5   6 59 27.192  S77.3505   2315.486     NE
   5   7  0 - 74 47 34   +22 39  6                                  +   860.733
FTMONM 104  5   7  0 19.020  S75.2771   2155.461     NE
   5   7  1 - 72 21 21   +25 11 13                                  +   844.746
LINCON 105  5   7  1 20.406  S75.2647   2123.479     NE
   5   7  2 - 69 47 36   +27 40 53                                  +   828.681
CPCAN1 107  5   7  2 13.099  E60.3243   1444.360     NE          **
   5   7  3 - 67  5 19   +30  7 36                                  +   812.592
   5   7  4 - 64 13 21   +32 30 44                                  +   796.533
2RSTON  99  5   7  4 55.896  E82.8685   2557.123     NE          **
   5   7  5 - 61 10 30   +34 49 33                                  +   780.560
PDRSPG 117  5   7  5 11.077  E67.8129   1632.190     NE          **
```

```
ARKANS 109  5  7  5  4.815  E87.2519    2957.760     NE        **
  5  7  6 - 57 55 34  +37  3 15                      +   764.726
BELVOR 113  5  7  6 45.958  E78.0908    2134.344     NE        **
  5  7  7 - 54 27 17  +39 10 56                      +   749.088
ABDEEN 112  5  7  7  8.350  E78.2690    2134.415     NE        **
FTMONM 104  5  7  7 31.503  E77.3055    2058.286     NE        **
PNSTAT  96  5  7  7 47.797  E82.6570    2442.018     NE        **
  5  7  8 - 50 44 30  +41 11 31                      +   733.700
LINCON 105  5  7  8 44.919  E79.4067    2161.837     NE        **
  5  7  9 - 46 46  9  +43  3 53                      +   718.619
  5  7 10 - 42 31 29  +44 46 43                      +   703.899  TWILIGHT
  5  7 11 - 38  0  7  +46 18 40                      +   689.594  TWILIGHT
HOLBRG 101  5  7 13 45.258  W86.1062    2557.783     NE        **
  5  7 12 - 33 12 15  +47 38 18                      +   675.761  TWILIGHT
  5  7 13 - 28  8 49  +48 44 12                      +   662.451  TWILIGHT
  5  7 14 - 22 51 39  +49 34 59                      +   649.719  TWILIGHT
  5  7 15 - 17 23 31  +50  9 31                      +   637.617  TWILIGHT
  5  7 16 - 11 47 58  +50 26 51                      +   626.194
  5  7 17 -  6  9 13  +50 26 26                      +   615.502
  5  7 18 -  0 31 45  +50  8  6                      +   605.588
  5  7 19 +  5  0  6  +49 32  9                      +   596.498
HOLBRG 101  5  7 19 41.133  S 5.3542     592.556     SE
  5  7 20 + 10 22 28  +48 39 13                      +   588.277
  5  7 21 + 15 32 17  +47 30 16                      +   580.965
HOLBRG 101  5  7 19 10.399  W 3.8323     522.396     SE        **
  5  7 22 + 20 27 24  +46  6 32                      +   574.601
  5  7 23 + 25  6 35  +44 29 18                      +   569.222
  5  7 24 + 29 29 23  +42 39 59                      +   564.858
  5  7 25 + 33 35 56  +40 39 57                      +   561.539
  5  7 26 + 37 26 58  +38 30 30                      +   559.289
  5  7 27 + 41  3 24  +36 12 50                      +   558.127
  5  7 28 + 44 26 27  +33 48  5                      +   558.069
  5  7 29 + 47 37 18  +31 17 16                      +   559.123
  5  7 30 + 50 37 15  +28 41 15                      +   561.297
  5  7 31 + 53 27 32  +26  0 53                      +   564.588
  5  7 32 + 56  9 19  +23 16 52                      +   568.990
  5  7 33 + 58 43 44  +20 29 52                      +   574.491
  5  7 34 + 61 11 48  +17 40 28                      +   581.072
  5  7 35 + 63 34 31  +14 49 13                      +   588.710
  5  7 36 + 65 52 46  +11 56 34                      +   597.376
  5  7 37 + 68  7 26  + 9  3  0                      +   607.033
  5  7 38 + 70 19 17  + 6  8 56                      +   617.642
```

5	7	39	+	72	29	5	+	3	14	44	+ 629.156
5	7	40	+	74	37	34	+	0	20	47	+ 641.523
5	7	41	+	76	45	27	-	2	32	35	+ 654.690
5	7	42	+	78	53	25	-	5	24	59	+ 668.595
5	7	43	+	81	2	9	-	8	16	7	+ 683.176
5	7	44	+	83	12	20	-11		5	39	+ 698.365
5	7	45	+	85	24	41	-13		53	13	+ 714.093
5	7	46	+	87	39	54	-16		38	30	+ 730.288
5	7	47	+	89	58	43	-19		21	9	+ 746.876
5	7	48	+	92	21	55	-22		0	46	+ 763.781
5	7	49	+	94	50	16	-24		36	57	+ 780.929
5	7	50	+	97	24	38	-27		9	18	+ 798.242
5	7	51	+100		5	52	-29		37	21	+ 815.645
5	7	52	+102		54	52	-32		0	34	+ 833.062
5	7	53	+105		52	32	-34		18	25	+ 850.418
5	7	54	+108		59	47	-36		30	18	+ 867.639
5	7	55	+112		17	29	-38		35	32	+ 884.655
5	7	56	+115		46	27	-40		33	23	+ 901.395
5	7	57	+119		27	19	-42		23	6	+ 917.793
5	7	58	+123		20	35	-44		3	48	+ 933.784
5	7	59	+127		26	25	-45		34	38	+ 949.306
5	8	0	+131		44	39	-46		54	42	+ 964.301
5	8	1	+136		14	36	-48		3	8	+ 978.712
5	8	2	+140		55	5	-48		59	7	+ 992.488
5	8	3	+145		44	20	-49		41	55	+ 1005.580
5	8	4	+150		40	4	-50		11	0	+ 1017.943
5	8	5	+155		39	35	-50		25	58	+ 1029.534
5	8	6	+160		39	53	-50		26	43	+ 1040.317
5	8	7	+165		37	55	-50		13	21	+ 1050.257
5	8	8	+170		30	47	-49		46	12	+ 1059.323
5	8	9	+175		15	55	-49		5	50	+ 1067.488 TWILIGHT
5	8	10	+179		51	13	-48		12	59	+ 1074.730 TWILIGHT
5	8	11	-175		44	48	-47		8	30	+ 1081.028 TWILIGHT
5	8	12	-171		33	10	-45		53	18	+ 1086.367 TWILIGHT
5	8	13	-167		34	19	-44		28	19	+ 1090.735 TWILIGHT
5	8	14	-163		48	19	-42		54	30	+ 1094.123 TWILIGHT
5	8	15	-160		14	51	-41		12	44	+ 1096.525 TWILIGHT
5	8	16	-156		53	24	-39		23	51	+ 1097.940 TWILIGHT
5	8	17	-153		43	15	-37		28	37	+ 1098.369
5	8	18	-150		43	34	-35		27	44	+ 1097.816
5	8	19	-147		53	30	-33		21	49	+ 1096.290
5	8	20	-145		12	10	-31		11	26	+ 1093.801

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  5   8 21 -142 38 42   -28 57  4                          + 1090.363
  5   8 22 -140 12 16   -26 39 10                          + 1085.993
  5   8 23 -137 52  2   -24 18  8                          + 1080.711
  5   8 24 -135 37 15   -21 54 17                          + 1074.539
  5   8 25 -133 27 11   -19 27 58                          + 1067.501
  5   8 26 -131 21  9   -16 59 26                          + 1059.625
  5   8 27 -129 18 28   -14 28 57                          + 1050.941
  5   8 28 -127 18 33   -11 56 46                          + 1041.481
  5   8 29 -125 20 47   - 9 23  6                          + 1031.278
  5   8 30 -123 24 34   - 6 48  9                          + 1020.370
  5   8 31 -121 29 23   - 4 12  8                          + 1008.794
  5   8 32 -119 34 38   - 1 35 14                          +  996.591
   5  8 32 36  LONG.   -118 25 10  PASS NO.   323 +   988.857
  5   8 33 -117 39 47   + 1  2 21                          +  983.802
  5   8 34 -115 44 13   + 3 40 24                          +  970.471
  5   8 35 -113 47 25   + 6 18 43                          +  956.642
  5   8 36 -111 48 46   + 8 57  4                          +  942.362
  5   8 37 -109 47 38   +11 35 13                          +  927.679
  5   8 38 -107 43 22   +14 12 54                          +  912.642
WHITES 111   5  8 38 27.760  S76.6609   2338.497    NE
  5   8 39 -105 35 15   +16 49 50                          +  897.300
BOLDER  95   5  8 39  9.391  S83.4722   2837.440    NE
  5   8 40 -103 22 32   +19 25 41                          +  881.704
  5   8 41 -101  4 24   +22  0  7                          +  865.906
  5   8 42 - 98 39 59   +24 32 43                          +  849.958
FTSILL 110   5  8 42  6.155  S58.9640   1439.081    NE
  5   8 43 - 96  8 19   +27  3  1                          +  833.915
CPCAN1 107   5  8 43 28.387  W67.4395   1701.824    NE         **
  5   8 44 - 93 28 21   +29 30 30                          +  817.829
ARKANS 109   5  8 44 57.438  S26.9332    887.388    NE
  5   8 45 - 90 39  1   +31 54 33                          +  801.755
UWISCN 102   5  8 45 19.789  S62.3005   1459.577    NE
UILNOS  97   5  8 45 48.648  S46.5203   1082.986    NE
WHITES 111   5  8 45 45.867  E74.1349   1962.880    NE         **
  5   8 46 - 87 39  8   +34 14 30                          +  785.748
2RSTON  99   5  8 46 18.765  N 2.4168    781.376    NE
PDRSPG 117   5  8 46 26.489  W57.5520   1295.084    NE         **
FTSILL 110   5  8 46 10.710  E59.2661   1347.592    NE         **
ARKANS 109   5  8 46 20.165  E29.0394    878.085    NE         **
GOLOST 103   5  8 46 30.135  E87.9918   3028.037    NE         **
2RSTON  99   5  8 46 11.246  W 3.0419    783.733    NE         **
  5   8 47 - 84 27 28   +36 29 33                          +  769.862
```

```
BPOINT 126  5  8 47 53.707  W29.6088     854.914     NE          **
LANGLY 106  5  8 47 16.566  W44.2080    1018.594     NE          **
  5  8 48 - 81  2 48  +38 38 50                       +   754.154
CPCAN1 107  5  8 48  7.447  N64.4307    1458.261     NE
PNSTAT  96  5  8 48 52.374  S 3.6298     741.587     NE
BELVOR 113  5  8 48  1.370  W26.6263     832.311     NE          **
ABDEEN 112  5  8 48 23.720  W24.8236     815.098     NE          **
FTMONM 104  5  8 48 46.895  W28.5578     832.166     NE          **
UILNOS  97  5  8 48 42.301  E53.4937    1148.078     NE          **
BOLDER  95  5  8 48 43.001  E83.2535    2503.019     NE          **
  5  8 49 - 77 23 54  +40 41 19                       +   738.677
BPOINT 126  5  8 49  4.775  N22.1285     789.355     NE
PORSPG 117  5  8 49 29.247  N48.8629    1044.922     NE
BELVOR 113  5  8 49  4.054  N19.6008     777.909     NE
ABDEEN 112  5  8 49 20.678  N17.6378     765.593     NE
LANGLY 106  5  8 49 15.693  N35.1915     876.912     NE
FTMONM 104  5  8 49 51.927  N19.6092     765.230     NE
PNSTAT  96  5  8 49  3.189  E 4.9032     739.911     NE          **
  5  8 50 - 73 29 43  +42 35 52                       +   723.488
LINCON 105  5  8 50 29.088  N 8.2737     722.991     NE
LINCON 105  5  8 50  0.290  W14.0842     743.451     NE          **
UWISCN 102  5  8 50 15.760  E70.4858    1642.254     NE          **
  5  8 51 - 69 19 23  +44 21 15                       +   708.642
  5  8 52 - 64 52 24  +45 56  7                       +   694.193  TWILIGHT
  5  8 53 - 60  8 48  +47 19  2                       +   680.197  TWILIGHT
  5  8 54 - 55  9 19  +48 28 35                       +   666.708  TWILIGHT
  5  8 55 - 49 55 33  +49 23 23                       +   653.778  TWILIGHT
  5  8 56 - 44 30  1  +50  2 12                       +   641.461  TWILIGHT
  5  8 57 - 38 56  4  +50 24  3                       +   629.808
  5  8 58 - 33 17 47  +50 28 15                       +   618.869
  5  8 59 - 27 39 37  +50 14 34                       +   608.692
  5  9  0 - 22  6  0  +49 43  8                       +   599.326
  5  9  1 - 16 40 54  +48 54 32                       +   590.813
  5  9  2 - 11 27 37  +47 49 36                       +   583.198
  5  9  3 -  6 28 33  +46 29 37                       +   576.520
  5  9  4 -  1 45 11  +44 55 46                       +   570.814
  5  9  5 +  2 41 50  +43  9 28                       +   566.116
  5  9  6 +  6 52 34  +41 12  6                       +   562.454
HDLBRG 101  5  9  6 27.638  S66.8965    1200.931     SE
  5  9  7 + 10 47 32  +39  4 59                       +   559.853
  5  9  8 + 14 27 40  +36 49 20                       +   558.337
  5  9  9 + 17 54  3  +34 26 20                       +   557.920
```

5	9	10	+	21	7	58	+31	56	59	+	558.615		
5	9	11	+	24	10	38	+29	22	14	+	560.428		
5	9	12	+	27	3	20	+26	42	55	+	563.360		
5	9	13	+	29	47	14	+23	59	46	+	567.407		
5	9	14	+	32	23	28	+21	13	28	+	572.558		
5	9	15	+	34	53	7	+18	24	37	+	578.796		
5	9	16	+	37	17	9	+15	33	46	+	586.101		
5	9	17	+	39	36	30	+12	41	25	+	594.443		
5	9	18	+	41	52	2	+ 9	48	1	+	603.790		
5	9	19	+	44	4	34	+ 6	54	0	+	614.103		
5	9	20	+	46	14	51	+ 3	59	46	+	625.335		
5	9	21	+	48	23	38	+ 1	5	40	+	637.439		
5	9	22	+	50	31	39	- 1	47	55	+	650.360		
5	9	23	+	52	39	34	- 4	40	39	+	664.040		
5	9	24	+	54	48	4	- 7	32	11	+	678.415		
5	9	25	+	56	57	52	-10	22	12	+	693.421		
5	9	26	+	59	9	37	-13	10	21	+	708.988		
5	9	27	+	61	24	4	-15	56	19	+	725.045		
5	9	28	+	63	41	56	-18	39	43	+	741.518		
5	9	29	+	66	3	59	-21	20	11	+	758.333		
5	9	30	+	68	31	0	-23	57	21	+	775.414		
5	9	31	+	71	3	48	-26	30	46	+	792.685		
5	9	32	+	73	43	16	-29	0	0	+	810.069		
5	9	33	+	76	30	15	-31	24	33	+	827.490		
5	9	34	+	79	25	41	-33	43	52	+	844.873		
5	9	35	+	82	30	28	-35	57	22	+	862.145		
5	9	36	+	85	45	30	-38	4	24	+	879.234		
5	9	37	+	89	11	36	-40	4	14	+	896.069		
5	9	38	+	92	49	28	-41	56	7	+	912.582		
5	9	39	+	96	39	38	-43	39	13	+	928.708		
5	9	40	+100	42	23		-45	12	39	+	944.385		
5	9	41	+104	57	36		-46	35	33	+	959.552		
5	9	42	+109	24	45		-47	47	1	+	974.153		
5	9	43	+114	2	48		-48	46	14	+	988.135		
5	9	44	+118	50	6		-49	32	25	+	1001.448		
5	9	45	+123	44	31		-50	5	0	+	1014.045		
5	9	46	+128	43	26		-50	23	33	+	1025.885		
5	9	47	+133	43	54		-50	27	52	+	1036.927		
5	9	48	+138	42	51		-50	18	1	+	1047.137		
5	9	49	+143	37	19		-49	54	16	+	1056.483		
5	9	50	+148	24	39		-49	17	9	+	1064.937	TWILIGHT	
5	9	51	+153	2	38		-48	27	20	+	1072.474	TWILIGHT	

```
  5  9 52 +157 29 36  -47 25 40                          + 1079.074  TWILIGHT
  5  9 53 +161 44 25  -46 13  3                          + 1084.720  TWILIGHT
  5  9 54 +165 46 30  -44 50 25                          + 1089.399  TWILIGHT
  5  9 55 +169 35 44  -43 18 43                          + 1093.100  TWILIGHT
  5  9 56 +173 12 17  -41 38 51                          + 1095.818  TWILIGHT
  5  9 57 +176 36 41  -39 51 40                          + 1097.550  TWILIGHT
  5  9 58 +179 49 36  -37 57 57                          + 1098.294
  5  9 59 -177  8 11  -35 58 25                          + 1098.056
  5 10  0 -174 15 48  -33 53 42                          + 1096.843
  5 10  1 -171 32 23  -31 44 23                          + 1094.663
  5 10  2 -168 57  3  -29 30 59                          + 1091.531
  5 10  3 -166 28 57  -27 13 56                          + 1087.461
  5 10  4 -164  7 15  -24 53 40                          + 1082.473
  5 10  5 -161 51 11  -22 30 30                          + 1076.587
  5 10  6 -159 40  1  -20  4 47                          + 1069.829
  5 10  7 -157 33  3  -17 36 48                          + 1062.224
  5 10  8 -155 29 37  -15  6 49                          + 1053.801
  5 10  9 -153 29  5  -12 35  4                          + 1044.592
  5 10 10 -151 30 51  -10  1 47                          + 1034.630
  5 10 11 -149 34 21  - 7 27 10                          + 1023.950
  5 10 12 -147 38 59  - 4 51 25                          + 1012.591
  5 10 13 -145 44 12  - 2 14 45                          + 1000.591
   5 10 13 51  LONG.  -144  5 55  PASS NO.  324 +  989.801
  5 10 14 -143 49 26  + 0 22 38                          +  987.992
  5 10 15 -141 54  9  + 3  0 33                          +  974.836
  5 10 16 -139 57 46  + 5 38 46                          +  961.168
  5 10 17 -137 59 41  + 8 17  5                          +  947.034
  5 10 18 -135 59 16  +10 55 16                          +  932.481
  5 10 19 -133 55 53  +13 33  3                          +  917.557
  5 10 20 -131 48 52  +16 10  9                          +  902.312
  5 10 21 -129 37 26  +18 46 16                          +  886.796
  5 10 22 -127 20 49  +21 21  3                          +  871.061
  5 10 23 -124 58  7  +23 54  6                          +  855.159
  5 10 24 -122 28 26  +26 24 59                          +  839.143
STNFDU  98  5 10 24  7.277  S61.9855   1514.996    NE
  5 10 25 -119 50 45  +28 53 11                          +  823.066
  5 10 26 -117  3 58  +31 18  8                          +  806.983
NELCAL 121  5 10 26  1.788  S10.7189    819.167    NE
GOLDST 103  5 10 26  4.405  S31.8810    927.951    NE
NELCAL 121  5 10 26 32.234  E11.0254    811.657    NE        **
  5 10 27 -114  6 57  +33 39 10                          +  790.949
WHITES 111  5 10 27  1.156  W45.4103   1068.576    NE        **
```

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FTSILL 110  5 10 27 26.019  W66.6978   1598.076    NE        **
ARKANS 109  5 10 27 35.536  W78.3526   2211.278    NE        **
GOLDST 103  5 10 27 45.527  E34.3789    919.593    NE        **
2RSTON  99  5 10 27 26.617  W83.6714   2630.845    NE        **
  5 10 28 -110 58 29  +35 55 30                     +  775.017
STNFDU  98  5 10 28 40.877  E64.1728   1470.309    NE        **
  5 10 29 -107 37 19  +38  6 19                     +  759.244
WHITES 111  5 10 29 14.990  N39.8862    950.283    NE
BOLDER  95  5 10 29 40.183  S 6.0445    750.827    NE
BELVOR 113  5 10 29 16.741  W86.0903   2789.709    NE        **
ABDEEN 112  5 10 29 39.091  W85.6581   2735.706    NE        **
UILNOS  97  5 10 29 57.713  W68.8214   1614.566    NE        **
BOLDER  95  5 10 29 58.372  E 8.0520    749.010    NE        **
  5 10 30 -104  2 16  +40 10 36                     +  743.685
FTMONM 104  5 10 30  2.265  W86.0229   2757.184    NE        **
PNSTAT  96  5 10 30 18.580  W81.2311   2332.115    NE        **
  5 10 31 -100 12 10  +42  7 16                     +  728.394
FTSILL 110  5 10 31 26.640  N57.5310   1207.183    NE
LINCON 105  5 10 31 15.764  W83.4210   2479.940    NE        **
UWISCN 102  5 10 31 31.131  W48.3194   1021.332    NE        **
  5 10 32 - 96  6  7  +43 55  6                    +  713.428
  5 10 33 - 91 43 30  +45 32 47                     +  698.841  TWILIGHT
ARKANS 109  5 10 33 12.501  N66.7440   1443.751    NE
UWISCN 102  5 10 33 26.694  N29.3864    782.316    NE
UILNOS  97  5 10 33 45.295  N51.3158   1027.353    NE
  5 10 34 - 87  4 13  +46 58 53                     +  684.689  TWILIGHT
2RSTON  99  5 10 34  4.864  N71.0556   1599.311    NE
  5 10 35 - 82  8 48  +48 12  0                     +  671.025  TWILIGHT
BELVOR 113  5 10 35 58.119  N66.9240   1383.010    NE
CPCAN1 107  5 10 35 18.095  N84.5781   2446.578    NE
PNSTAT  96  5 10 35 49.653  N59.6548   1163.214    NE
  5 10 36 - 76 58 36  +49 10 43                     +  657.904  TWILIGHT
PDRSPG 117  5 10 36 16.329  N75.5438   1770.005    NE
ABDEEN 112  5 10 36 10.067  N65.2469   1319.936    NE
FTMONM 104  5 10 36 33.015  N63.8833   1267.598    NE
  5 10 37 - 71 35 54  +49 53 46                     +  645.378  TWILIGHT
LINCON 105  5 10 37  0.968  N56.4688   1065.694    NE
  5 10 38 - 66  3 50  +50 20  4                     +  633.499  TWILIGHT
  5 10 39 - 60 26 20  +50 28 52                     +  622.318
  5 10 40 - 54 47 47  +50 19 49                     +  611.884
  5 10 41 - 49 12 37  +49 52 57                     +  602.245
  5 10 42 - 43 45  1  +49  8 44                     +  593.447
```

5	10	43	-	38	28	26	+48	7	59			+	585.532
5	10	44	-	33	25	33	+46	51	46			+	578.542
5	10	45	-	28	38	2	+45	21	24			+	572.514
5	10	46	-	24	6	47	+43	38	12			+	567.483
5	10	47	-	19	51	53	+41	43	35			+	563.480
5	10	48	-	15	52	54	+39	38	53			+	560.532
5	10	49	-	12	9	1	+37	25	21			+	558.662
5	10	50	-	8	39	11	+35	4	9			+	557.887
5	10	51	-	5	22	8	+32	36	21			+	558.223
5	10	52	-	2	16	39	+30	2	55			+	559.675
5	10	53	+	0	38	32	+27	24	42			+	562.248
5	10	54	+	3	24	37	+24	42	28			+	565.937
5	10	55	+	6	2	45	+21	56	54			+	570.736
5	10	56	+	8	34	2	+19	8	39			+	576.630
5	10	57	+	10	59	27	+16	18	14			+	583.597
5	10	58	+	13	19	57	+13	26	12			+	591.613
5	10	59	+	15	36	25	+10	33	0			+	600.645
5	11	0	+	17	49	41	+ 7	39	5			+	610.656
5	11	1	+	20	0	31	+ 4	44	49			+	621.602
5	11	2	+	22	9	39	+ 1	50	37			+	633.437
SANANA	116			5	11	2	38.052		E88.8077	2801.750		SE	**
5	11	3	+	24	17	50	- 1	3	10			+	646.106
5	11	4	+	26	25	44	- 3	56	12			+	659.554
5	11	5	+	28	34	4	- 6	48	7			+	673.718
5	11	6	+	30	43	29	- 9	38	36			+	688.533
5	11	7	+	32	54	43	-12	27	19			+	703.932
5	11	8	+	35	8	27	-15	13	55			+	719.843
5	11	9	+	37	25	25	-17	58	[illegible]			+	736.195
5	11	10	+	39	46	22	-20	39	[illegible]			+	752.911
5	11	11	+	42	12	5	-23	17	[illegible]			+	769.918
5	11	12	+	44	43	23	-25	51	[illegible]			+	787.138
5	11	13	+	47	21	6	-28	22	[illegible]			+	804.495
5	11	14	+	50	6	8	-30	48	[illegible]			+	821.914
5	11	15	+	52	59	23	-33	8	[illegible]			+	839.318
5	11	16	+	56	1	47	-35	24				+	856.634
5	11	17	+	59	14	11	-37	32	[illegible]			+	873.789
5	11	18	+	62	37	28	-39	34	[illegible]			+	890.711
5	11	19	+	66	12	22	-41	28	[illegible]			+	907.333
5	11	20	+	69	59	27	-43	14	[illegible]			+	923.588
5	11	21	+	73	59	5	-44	50	[illegible]			+	939.413
5	11	22	+	78	11	16	-46	15	[illegible]			+	954.747
5	11	23	+	82	35	33	-47	30	[illegible]			+	969.532

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  5 11 24 + 87 11  3   -48 32 31                          +  983.715
  5 11 25 + 91 56 17   -49 22  3                          +  997.244
  5 11 26 + 96 49 14   -49 58  7                          + 1010.072
  5 11 27 +101 47 21   -50 20 13                          + 1022.155
  5 11 28 +106 47 47   -50 28  7                          + 1033.454
  5 11 29 +111 47 27   -50 21 48                          + 1043.931
  5 11 30 +116 43 23   -50  1 30                          + 1053.554
  5 11 31 +121 32 47   -49 27 40                          + 1062.293
  5 11 32 +126 13 20   -48 40 57                          + 1070.123  TWILIGHT
  5 11 33 +130 43 13   -47 42 10                          + 1077.023  TWILIGHT
  5 11 34 +135  1 11   -46 32 11                          + 1082.975  TWILIGHT
  5 11 35 +139  6 31   -45 11 58                          + 1087.963  TWILIGHT
  5 11 36 +142 58 58   -43 42 26                          + 1091.977  TWILIGHT
  5 11 37 +146 38 40   -42  4 31                          + 1095.010  TWILIGHT
  5 11 38 +150  6  4   -40 19  5                          + 1097.057  TWILIGHT
  5 11 39 +153 21 46   -38 26 55                          + 1098.118  TWILIGHT
  5 11 40 +156 26 35   -36 28 46                          + 1098.196
  5 11 41 +159 21 21   -34 25 18                          + 1097.295
  5 11 42 +162  6 55   -32 17  5                          + 1095.426
  5 11 43 +164 44 10   -30  4 40                          + 1092.600
  5 11 44 +167 14  0   -27 48 30                          + 1088.832
  5 11 45 +169 37 13   -25 29  0                          + 1084.139
  5 11 46 +171 54 36   -23  6 33                          + 1078.543
  5 11 47 +174  6 54   -20 41 28                          + 1072.067
  5 11 48 +176 14 50   -18 14  2                          + 1064.735
  5 11 49 +178 19  4   -15 44 33                          + 1056.576
SAMOAI 114  5 11 49 33.552  W52.3438   1553.663     NE        **
  5 11 50 -179 39 45   -13 13 15                          + 1047.622
  5 11 51 -177 41  2   -10 40 21                          + 1037.904
  5 11 52 -175 44 10   - 8  6  5                          + 1027.456
  5 11 53 -173 48 35   - 5 30 38                          + 1016.317
  5 11 54 -171 53 44   - 2 54 13                          + 1004.525
  5 11 55 -169 59  4   - 0 17  2                          +  992.119
   5 11 55  6  LONG.   -169 46 36  PASS NO.  325 +  990.716
  5 11 56 -168  4  0   + 2 20 44                          +  979.144
  5 11 57 -166  7 58   + 4 58 51                          +  965.642
  5 11 58 -164 10 24   + 7 37  7                          +  951.658
  5 11 59 -162 10 41   +10 15 19                          +  937.240
  5 12  0 -160  8 10   +12 53 11                          +  922.436
BSANDS 100  5 12  0  9.867  S52.7866   1382.361     NE
  5 12  1 -158  2 10   +15 30 26                          +  907.293
  5 12  2 -155 51 58   +18  6 47    30                   +  891.863
```

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  5 12  3 -153 36 47  +20 41 53                                  +  876.197
BSANDS 100  5 12  3 31.081  E46.6075   1188.347    NE            **
  5 12  4 -151 15 46  +23 15 23                                  +  860.346
  5 12  5 -148 48  1  +25 46 49                                  +  844.363
  5 12  6 -146 12 31  +28 15 42                                  +  828.302
  5 12  7 -143 28 14  +30 41 29                                  +  812.216
  5 12  8 -140 34  0  +33  3 32                                  +  796.161
  5 12  9 -137 28 38  +35 21  7                                  +  780.189
GOLDST 103  5 12  9  0.795  W77.0538   2119.298    NE            **
STNFDU  98  5 12  9 56.207  W61.2299   1376.765    NE            **
  5 12 10 -134 10 54  +37 33 23                                  +  764.358
  5 12 11 -130 39 35  +39 39 25                                  +  748.722
BOLDER  95  5 12 11 13.805  W80.9305   2319.575    NE            **
  5 12 12 -126 53 31  +41 38  7                                  +  733.336
UWISCN 102  5 12 12 46.502  W88.6895   2977.544    NE            **
  5 12 13 -122 51 42  +43 28 18                                  +  718.256
STNFDU  98  5 12 13  9.965  N49.1954   1029.268    NE
  5 12 14 -118 33 28  +45  8 42                                  +  703.537  TWILIGHT
GOLDST 103  5 12 14 22.639  N65.2761   1393.156    NE
  5 12 15 -113 58 32  +46 37 54                                  +  689.234  TWILIGHT
  5 12 16 -109  7 15  +47 54 29                                  +  675.402  TWILIGHT
WHITES 111  5 12 16 28.192  N76.1991   1838.469    NE
BOLDER  95  5 12 16 45.722  N60.8671   1201.174    NE
  5 12 17 -104  0 46  +48 57  1                                  +  662.095  TWILIGHT
  5 12 18 - 98 41  6  +49 44 13                                  +  649.365  TWILIGHT
FTSILL 110  5 12 18  2.867  N77.4493   1871.259    NE
  5 12 19 - 93 11 11  +50 14 55                                  +  637.265  TWILIGHT
ARKANS 109  5 12 19 25.841  N78.3306   1891.316    NE
UWISCN 102  5 12 19 37.521  N57.3326   1060.604    NE
JICNOS  97  5 12 19 53.012  N67.7625   1356.297    NE
  5 12 20 - 87 34 46  +50 28 18                                  +  625.848
ORSTON  99  5 12 20  9.553  N79.2678   1935.206    SE
  5 12 21 - 81 56  7  +50 23 53                                  +  615.162
BELVOR 113  5 12 21 51.190  N71.1647   1454.111    SE
CPCAN1 107  5 12 21 14.091  N87.8099   2625.078    SE
PNSTAT  96  5 12 21 43.280  N65.5480   1244.143    SE
  5 12 22 - 76 19 43  +50  1 36                                  +  605.255
PORSPG 117  5 12 22  8.597  N77.9742   1805.888    SE
ABDEEN 112  5 12 22  2.602  N69.0218   1362.431    SE
LINCON 105  5 12 22 52.494  N56.5339    993.361    SE
FTMCHM 104  5 12 22 24.806  N66.3010   1257.781    SE
  5 12 23 - 70 49 50  +49 21 50                                  +  596.175
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  5 12 24 - 65 30 10   +48 25 16                          +  587.965
  5 12 25 - 60 23 34   +47 12 58                          +  580.667
  5 12 26 - 55 31 59   +45 46  9                          +  574.320
  5 12 27 - 50 56 30   +44  6 10                          +  568.960
LINCON 105  5 12 27 48.218  E83.5409    2120.329     SE          **
  5 12 28 - 46 37 23   +42 14 23                          +  564.618
  5 12 29 - 42 34 21   +40 12 11                          +  561.325
  5 12 30 - 38 46 39   +38  0 50                          +  559.102
  5 12 31 - 35 13 16   +35 41 31                          +  557.971
  5 12 32 - 31 53  0   +33 15 20                          +  557.946
  5 12 33 - 28 44 38   +30 43 17                          +  559.038
  5 12 34 - 25 46 53   +28  6 13                          +  561.250
  5 12 35 - 22 58 32   +25 24 57                          +  564.582
  5 12 36 - 20 18 26   +22 40 10                          +  569.027
  5 12 37 - 17 45 27   +19 52 32                          +  574.573
  5 12 38 - 15 18 35   +17  2 37                          +  581.200
  5 12 39 - 12 56 52   +14 10 56                          +  588.885
  5 12 40 - 10 39 25   +11 17 57                          +  597.598
  5 12 41 -  8 25 22   + 8 24  9                          +  607.303
  5 12 42 -  6 13 57   + 5 29 54                          +  617.958
  5 12 43 -  4  4 25   + 2 35 37                          +  629.519
SANANA 116  5 12 43 53.525  W22.6318     688.581     SE          **
  5 12 44 -  1 56  1   - 0 18 21                          +  641.930
SANANA 116  5 12 44 54.273  S28.8942     736.470     SE
  5 12 45 +  0 11 55   - 3 11 39                          +  655.140
  5 12 46 +  2 20  6   - 6  3 56                          +  669.085
  5 12 47 +  4 29 14   - 8 54 52                          +  683.703
  5 12 48 +  6 39 58   -11 44  7                          +  698.926
  5 12 49 +  8 53  2   -14 31 21                          +  714.685
  5 12 50 + 11  9  8   -17 16 12                          +  730.907
  5 12 51 + 13 29  3   -19 58 19                          +  747.517
  5 12 52 + 15 53 31   -22 37 20                          +  764.442
  5 12 53 + 18 23 21   -25 12 49                          +  781.605
JOBURG 118  5 12 53 19.081  W54.8234    1238.709     SE          **
  5 12 54 + 20 59 24   -27 44 21                          +  798.928
  5 12 55 + 23 42 32   -30 11 26                          +  816.336
  5 12 56 + 26 33 40   -32 33 35                          +  833.754
JOBURG 118  5 12 56 33.786  S51.5908    1247.705     SE
  5 12 57 + 29 33 42   -34 50 13                          +  851.106
  5 12 58 + 32 43 33   -37  0 42                          +  868.320
  5 12 59 + 36  4  4   -39  4 22                          +  885.323
  5 13  0 + 39 36  1   -41  0 27                          +  902.047
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 5 13  1 + 43 20  3   -42 48 10                          +  918.426
 5 13  2 + 47 16 34   -44 26 40                          +  934.393
 5 13  3 + 51 25 39   -45 55  3                          +  949.888
 5 13  4 + 55 47  2   -47 12 27                          +  964.852
 5 13  5 + 60 19 54   -48 17 58                          +  979.230
 5 13  6 + 65  2 57   -49 10 50                          +  992.971
 5 13  7 + 69 54 14   -49 50 21                          + 1006.025
 5 13  8 + 74 51 23   -50 16  0                          + 1018.348
 5 13  9 + 79 51 36   -50 27 29                          + 1029.898
 5 13 10 + 84 51 49   -50 24 43                          + 1040.639
 5 13 11 + 89 49  1   -50  7 53                          + 1050.535
 5 13 12 + 94 40 20   -49 37 23                          + 1059.557
 5 13 13 + 99 23 20   -48 53 49                          + 1067.678  TWILIGHT
 5 13 14 +103 56  5   -47 57 58                          + 1074.876  TWILIGHT
 5 13 15 +108 17  9   -46 50 41                          + 1081.131  TWILIGHT
 5 13 16 +112 25 42   -45 32 56                          + 1086.428  TWILIGHT
 5 13 17 +116 21 24   -44  5 38                          + 1090.754  TWILIGHT
 5 13 18 +120  4 16   -42 29 43                          + 1094.101  TWILIGHT
 5 13 19 +123 34 42   -40 46  4                          + 1096.463  TWILIGHT
 5 13 20 +126 53 17   -38 55 31                          + 1097.841  TWILIGHT
 5 13 21 +130  0 44   -36 58 48                          + 1098.233
 5 13 22 +132 57 55   -34 56 36                          + 1097.647
 5 13 23 +135 45 41   -32 49 31                          + 1096.089
OOMERA 119  5 13 23 22.494  S 6.0952   1100.403    NE
OOMERA 119  5 13 23 47.151  E 6.2990   1099.697    NE        **
 5 13 24 +138 24 57   -30 38  6                          + 1093.570
 5 13 25 +140 56 33   -28 22 50                          + 1090.105
 5 13 26 +143 21 19   -26  4  9                          + 1085.710
 5 13 27 +145 40  4   -23 42 25                          + 1080.406
 5 13 28 +147 53 34   -21 17 58                          + 1074.214
 5 13 29 +150  2 31   -18 51  8                          + 1067.158
 5 13 30 +152  7 35   -16 22  9                          + 1059.267
 5 13 31 +154  9 27   -13 51 19                          + 1050.570
 5 13 32 +156  8 42   -11 18 49                          + 1041.098
 5 13 33 +158  5 58   - 8 44 54                          + 1030.887
 5 13 34 +160  1 47   - 6  9 46                          + 1019.973
 5 13 35 +161 56 44   - 3 33 37                          + 1008.392
 5 13 36 +163 51 22   - 0 56 38                          +  996.185
  5 13 36 21  LONG.   +164 32 41  PASS NO.  326 +  991.583
 5 13 37 +165 46 15   + 1 40 58                          +  983.394
 5 13 38 +167 41 56   + 4 18 58                          +  970.063
 5 13 39 +169 39  1   + 6 57 11                          +  956.235
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  5 13 40 +171 38  6   + 9 35 23                                  +  941.957
  5 13 41 +173 39 49   +12 13 18                                  +  927.277
  5 13 42 +175 44 50   +14 50 41                                  +  912.242
  5 13 43 +177 53 51   +17 27 15                                  +  896.903
  5 13 44 -179 52 21   +20  2 40                                  +  881.311
BSANDS 100  5 13 44 46.287  W75.3164   2185.652     NE              **
  5 13 45 -177 32 57   +22 36 33                                  +  865.517
  5 13 46 -175  7  3   +25  8 30                                  +  849.574
  5 13 47 -172 33 41   +27 38  3                                  +  833.534
  5 13 48 -169 51 48   +30  4 38                                  +  817.451
  5 13 49 -167  0 16   +32 27 40                                  +  801.380
  5 13 50 -163 57 56   +34 46 25                                  +  785.376
  5 13 51 -160 43 32   +37  0  5                                  +  769.493
BSANDS 100  5 13 51 16.480  N75.1842   1973.305     NE
  5 13 52 -157 15 53   +39  7 46                                  +  753.786
  5 13 53 -153 33 46   +41  8 25                                  +  738.311
  5 13 54 -149 36  9   +43  0 53                                  +  723.123
  5 13 55 -145 22 16   +44 43 53                                  +  708.278
  5 13 56 -140 51 42   +46 16  5                                  +  693.831  TWILIGHT
  5 13 57 -136  4 38   +47 36  1                                  +  679.836  TWILIGHT
  5 13 58 -131  2  0   +48 42 18                                  +  666.348  TWILIGHT
  5 13 59 -125 45 34   +49 33 34                                  +  653.421  TWILIGHT
STNFDU  98  5 13 59 39.661  N72.5626   1594.812     NE
  5 14  0 -120 18  3   +50  8 37                                  +  641.107  TWILIGHT
GOLDST 103  5 14  0 37.051  N77.6484   1849.195     NE
  5 14  1 -114 42 59   +50 26 32                                  +  629.458
  5 14  2 -109  4 33   +50 26 45                                  +  618.524
WHITES 111  5 14  2 24.703  N80.8487   2023.987     SE
BOLDER  95  5 14  2 40.729  N67.8074   1326.193     SE
  5 14  3 -103 27 13   +50  9  5                                  +  608.355
FTSILL 110  5 14  3 54.496  N78.5577   1833.787     SE
  5 14  4 -  97 55 20   +49 33 47                                  +  598.997
  5 14  5 -  92 32 45   +48 41 30                                  +  590.496
ARKANS 109  5 14  5 20.210  N75.9222   1649.317     SE
UWISCN 102  5 14  5 32.817  N47.3298    825.228     SE
UILNOS  97  5 14  5 49.790  N60.5375   1061.570     SE
  5 14  6 -  87 22 34   +47 33 10                                  +  582.894
2RSTON  99  5 14  6  8.330  N74.8610   1579.324     SE
  5 14  7 -  82 27  0   +46 10  0                                  +  576.231
CPCAN1 107  5 14  7 23.229  N82.8418   2080.613     SE
PNSTAT  96  5 14  7 58.763  N39.4204    718.759     SE
  5 14  8 -  77 47 17   +44 33 19                                  +  570.545
```

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BPOINT 126  5 14  8  9.145  N52.9020    884.866    SE
PORSPG 117  5 14  8 30.404  N63.9704   1125.355    SE
BELVOR 113  5 14  8  8.589  N51.5124    862.619    SE
ABDEEN 112  5 14  8 22.823  N44.1014    763.459    SE
LANGLY 106  5 14  8 18.559  N58.0502    980.511    SE
FTMONM 104  5 14  8 51.003  N30.7540    649.922    SE
UWISCN 102  5 14  8 49.129  E72.4517   1430.299    SE        **
  5 14  9 - 73 23 57  +42 44 29                     +   565.868
LINCON 105  5 14  9 27.114  S 9.3804    571.100    SE
LINCON 105  5 14  9  3.836  W14.4933    582.610    SE        **
PNSTAT  96  5 14  9 58.281  E56.2582    933.421    SE        **
  5 14 10 - 69 16 49  +40 44 52                     +   562.230
BELVOR 113  5 14 10 56.968  E66.3798   1184.248    SE        **
ABDEEN 112  5 14 10 35.833  E59.1869    991.974    SE        **
FTMONM 104  5 14 10 13.833  E43.9981    753.185    SE        **
UWILNOS  97  5 14 10 18.138  E80.3708   1868.301    SE        **
  5 14 11 - 65 25 14  +38 35 46                     +   559.657
  5 14 12 - 61 48 14  +36 18 25                     +   558.170
PORSPG 117  5 14 12 26.472  E75.1979   1546.212    SE        **
2RSTON  99  5 14 12 40.686  E89.1514   2633.690    SE        **
  5 14 13 - 58 24 41  +33 53 56                     +   557.787
  5 14 14 - 55 13 20  +31 23 18                     +   558.518
  5 14 15 - 52 12 57  +28 47 27                     +   560.369
  5 14 16 - 49 22 16  +26  7 11                     +   563.342
  5 14 17 - 46 40  6  +23 23 15                     +   567.431
  5 14 18 - 44  5 21  +20 36 17                     +   572.627
  5 14 19 - 41 36 59  +17 46 53                     +   578.911
  5 14 20 - 39 14  0  +14 55 35                     +   586.263
  5 14 21 - 36 55 30  +12  2 52                     +   594.653
  5 14 22 - 34 40 37  + 9  9 12                     +   604.047
  5 14 23 - 32 28 33  + 6 15  0                     +   614.406
  5 14 24 - 30 18 35  + 3 20 39                     +   625.685
  5 14 25 - 28  9 56  + 0 26 32                     +   637.834
  5 14 26 - 26  1 54  - 2 27  1                     +   650.798
  5 14 27 - 23 53 48  - 5 19 38                     +   664.519
  5 14 28 - 21 44 57  - 8 11  0                     +   678.933
  5 14 29 - 19 34 39  -11  0 46                     +   693.974
  5 14 30 - 17 22 13  -13 48 35                     +   709.572
  5 14 31 - 15  6 55  -16 34  8                     +   725.658
  5 14 32 - 12 48  1  -19 17  3                     +   742.155
  5 14 33 - 10 24 45  -21 56 56                     +   758.990
  5 14 34 -  7 56 19  -24 33 25                     +   776.087
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5	14	35	-	5	21	53	-27	6	2	+	793.369	
5	14	36	-	2	40	34	-29	34	22	+	810.759	
5	14	37	+	0	8	29	-31	57	52	+	828.183	
5	14	38	+	3	6	14	-34	16	0	+	845.564	
5	14	39	+	6	13	33	-36	28	9	+	862.830	
5	14	40	+	9	31	21	-38	33	39	+	879.907	
5	14	41	+	13	0	25	-40	31	46	+	896.727	
5	14	42	+	16	41	24	-42	21	44	+	913.222	
5	14	43	+	20	34	48	-44	2	40	+	929.325	
5	14	44	+	24	40	49	-45	33	43	+	944.975	
5	14	45	+	28	59	13	-46	54	0	+	960.113	
5	14	46	+	33	29	22	-48	2	37	+	974.682	
5	14	47	+	38	10	5	-48	58	45	+	988.629	
5	14	48	+	42	59	35	-49	41	42	+	1001.904	
5	14	49	+	47	55	35	-50	10	53	+	1014.462	
5	14	50	+	52	55	23	-50	25	56	+	1026.261	
5	14	51	+	57	55	56	-50	26	45	+	1037.262	
5	14	52	+	62	54	14	-50	13	25	+	1047.428	
5	14	53	+	67	47	20	-49	46	17	+	1056.731	
5	14	54	+	72	32	41	-49	5	55	+	1065.141	TWILIGHT
5	14	55	+	77	8	11	-48	13	3	+	1072.634	TWILIGHT
5	14	56	+	81	32	19	-47	8	32	+	1079.190	TWILIGHT
5	14	57	+	85	44	5	-45	53	18	+	1084.793	TWILIGHT
5	14	58	+	89	43	1	-44	28	17	+	1089.430	TWILIGHT
5	14	59	+	93	29	6	-42	54	26	+	1093.090	TWILIGHT
5	15	0	+	97	2	36	-41	12	38	+	1095.768	TWILIGHT
5	15	1	+100	24	4		-39	23	44	+	1097.461	TWILIGHT
5	15	2	+103	34	14		-37	28	29	+	1098.170	
5	15	3	+106	33	54		-35	27	35	+	1097.898	
5	15	4	+109	23	57		-33	21	40	+	1096.652	
5	15	5	+112	5	15		-31	11	18	+	1094.442	
5	15	6	+114	38	40		-28	56	58	+	1091.281	
5	15	7	+117	5	3		-26	39	6	+	1087.186	
5	15	8	+119	25	14		-24	18	6	+	1082.175	
5	15	9	+121	39	57		-21	54	19	+	1076.269	
5	15	10	+123	49	57		-19	28	4	+	1069.492	
5	15	11	+125	55	55		-16	59	38	+	1061.871	
5	15	12	+127	58	30		-14	29	15	+	1053.434	
5	15	13	+129	58	20		-11	57	11	+	1044.213	
5	15	14	+131	56	1		- 9	23	38	+	1034.242	
5	15	15	+133	52	6		- 6	48	48	+	1023.555	
5	15	16	+135	47	12		- 4	12	55	+	1012.190	

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  5 15 17 +137 41 49   - 1 36 10                                  + 1000.187
   5 15 17 36  LONG.   +138 51 57  PASS NO.   327 +   992.483
  5 15 18 +139 36 33   + 1  1 15                                  +  987.585
  5 15 19 +141 31 58   + 3 39  8                                  +  974.428
  5 15 20 +143 28 37   + 6 17 16                                  +  960.761
  5 15 21 +145 27  6   + 8 55 27                                  +  946.628
  5 15 22 +147 28  2   +11 33 25                                  +  932.077
  5 15 23 +149 32  6   +14 10 55                                  +  917.156
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  5 15 25 +153 52 28   +19 23 22                                  +  886.402
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  5 15 29 +163 45 19   +29 27 35                                  +  822.687
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  5 15 31 +169 33 36   +34 11 24                                  +  790.575
TOKAWA 108  5 15 31 16.746  E89.9381    3257.618     NE          **
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  5 15 33 +176  8 49   +38 35 41                                  +  758.874
  5 15 34 +179 47  2   +40 38 12                                  +  743.317
  5 15 35 -176 19 29   +42 32 51                                  +  728.027
  5 15 36 -172  9 55   +44 18 23                                  +  713.062
  5 15 37 -167 43 44   +45 53 28                                  +  698.477  TWILIGHT
  5 15 38 -163  0 56   +47 16 41                                  +  684.325  TWILIGHT
  5 15 39 -158  2 15   +48 26 36                                  +  670.663  TWILIGHT
  5 15 40 -152 49 15   +49 21 50                                  +  657.544  TWILIGHT
  5 15 41 -147 24 21   +50  1 10                                  +  645.020  TWILIGHT
  5 15 42 -141 50 56   +50 23 35                                  +  633.145  TWILIGHT
  5 15 43 -136 13  1   +50 28 24                                  +  621.969
  5 15 44 -130 35  2   +50 15 22                                  +  611.542
  5 15 45 -125  1 24   +49 44 35                                  +  601.912
STNFDU  98  5 15 45 31.352  N72.7304    1505.585     SE
  5 15 46 -119 36  8   +48 56 38                                  +  593.124
GOLDST 103  5 15 46 31.131  N75.3541    1618.396     SE
  5 15 47 -114 22 32   +47 52 22                                  +  585.222
  5 15 48 -109 23  3   +46 32 57                                  +  578.247
WHITES 111  5 15 48 32.956  N73.6443    1502.891     SE
BOLDER  95  5 15 48 52.216  N48.3621     819.058     SE
  5 15 49 -104 39 10   +44 59 38                                  +  572.237
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FTSILL 110  5 15 50 24.975  N61.8009    1062.099     SE
LINCON 105  5 15 50 19.434  W86.4934    2384.532     SE          **
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UWISCN 102  5 15 50  4.747  W60.5374   1033.022    SE        **
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ABDEEN 112  5 15 51 51.369  W75.7768   1583.356    SE        **
FTMONM 104  5 15 51 29.451  W80.1569   1854.781    SE        **
UILNOS  97  5 15 51 33.798  W43.4243    746.614    SE        **
PNSTAT  96  5 15 51 13.919  W76.2086   1610.293    SE        **
BOLDER  95  5 15 51 33.097  E65.5763   1158.969    SE        **
  5 15 52 - 92  4 47  +39 10  9                     +  560.326
ARKANS 109  5 15 52 20.785  N36.5960    682.062    SE
UWISCN 102  5 15 52 38.624  S50.7632    835.288    SE
BELVOR 113  5 15 52 12.566  W72.0340   1398.316    SE        **
  5 15 53 - 88 24  6  +36 54 50                     +  558.485
2RSTON  99  5 15 53 29.587  N12.9434    571.311    SE
UILNOS  97  5 15 53  2.828  S36.2326    677.621    SE
PDRSPG 117  5 15 53 42.070  W64.9434   1136.093    SE        **
FTSILL 110  5 15 53 56.860  E71.8067   1384.012    SE        **
ARKANS 109  5 15 53 47.982  E43.3867    741.783    SE        **
2RSTON  99  5 15 53 56.325  E15.1195    576.070    SE        **
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WHITES 111  5 15 54 20.158  E85.4717   2268.541    SE        **
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CPCAN1 107  5 15 55 21.421  N32.4253    651.218    SE
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BELVOR 113  5 15 56 31.294  S70.8536   1348.964    SE
ABDEEN 112  5 15 56 53.520  S74.8630   1536.107    SE
PNSTAT  96  5 15 56 16.009  S74.2267   1499.613    SE
CPCAN1 107  5 15 56 28.204  E32.6511    655.234    SE        **
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PDRSPG 117  5 15 57  5.303  S65.1635   1150.497    SE
FTMONM 104  5 15 57 37.850  S79.8574   1838.261    SE
  5 15 58 - 73  2 17  +24  6  8                     +  565.948
LINCON 105  5 15 58 34.972  S86.4998   2387.554    SE
  5 15 59 - 70 25 42  +21 19 52                     +  570.792
  5 16  0 - 67 55 45  +18 31  1                     +  576.731
PANTIG 120  5 16  0 28.845  W46.1036    801.819    SE        **
  5 16  1 - 65 31 26  +15 40  9                     +  583.745
  5 16  2 - 63 11 49  +12 47 44                     +  591.808
PANTIG 120  5 16  2 37.262  S53.1233    928.897    SE
  5 16  3 - 60 56  4  + 9 54 15                     +  600.888
  5 16  4 - 58 43 20  + 7  0  6                     +  610.946
  5 16  5 - 56 32 51  + 4  5 43                     +  621.940
  5 16  6 - 54 23 53  + 1 11 28                     +  633.820
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5	16	9	-	47	59	4	-	7	27	0	+	674.225	
5	16	10	-	45	49	10	-10	17	15		+	689.076	
5	16	11	-	43	37	18	-13	5	39		+	704.508	
5	16	12	-	41	22	46	-15	51	52		+	720.449	
5	16	13	-	39	4	49	-18	35	32		+	736.826	
5	16	14	-	36	42	42	-21	16	17		+	753.564	
5	16	15	-	34	15	36	-23	53	44		+	770.587	
5	16	16	-	31	42	44	-26	27	26		+	787.820	
5	16	17	-	29	3	13	-28	56	57		+	805.186	
5	16	18	-	26	16	9	-31	21	47		+	822.608	
5	16	19	-	23	20	39	-33	41	23		+	840.011	
5	16	20	-	20	15	47	-35	55	9		+	857.322	
5	16	21	-	17	0	40	-38	2	27		+	874.466	
5	16	22	-	13	34	29	-40	2	33		+	891.375	
5	16	23	-	9	56	29	-41	54	41		+	907.979	
5	16	24	-	6	6	11	-43	38	2		+	924.213	
5	16	25	-	2	3	17	-45	11	42		+	940.012	
5	16	26	+	2	12	7	-46	34	48		+	955.318	
5	16	27	+	6	39	28	-47	46	27		+	970.072	
5	16	28	+	11	17	44	-48	45	50		+	984.220	
5	16	29	+	16	5	18	-49	32	10		+	997.712	
5	16	30	+	20	59	59	-50	4	52		+	1010.502	
5	16	31	+	25	59	10	-50	23	30		+	1022.545	
5	16	32	+	30	59	53	-50	27	53		+	1033.801	
5	16	33	+	35	59	6	-50	18	4		+	1044.235	
5	16	34	+	40	53	49	-49	54	21		+	1053.814	
5	16	35	+	45	41	23	-49	17	13		+	1062.510	
5	16	36	+	50	19	34	-48	27	24		+	1070.297	TWILIGHT
5	16	37	+	54	46	41	-47	25	43		+	1077.153	TWILIGHT
5	16	38	+	59	1	39	-46	13	4		+	1083.061	TWILIGHT
5	16	39	+	63	3	49	-44	50	24		+	1088.007	TWILIGHT
5	16	40	+	66	53	8	-43	18	40		+	1091.980	TWILIGHT
5	16	41	+	70	29	44	-41	38	45		+	1094.972	TWILIGHT
5	16	42	+	73	54	10	-39	51	33		+	1096.981	TWILIGHT
5	16	43	+	77	7	5	-37	57	48		+	1098.005	TWILIGHT
5	16	44	+	80	9	18	-35	58	16		+	1098.047	
5	16	45	+	83	1	40	-33	53	33		+	1097.114	
5	16	46	+	85	45	4	-31	44	14		+	1095.214	
5	16	47	+	88	20	21	-29	30	51		+	1092.359	
5	16	48	+	90	48	24	-27	13	50		+	1088.565	

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  5 16 49 + 93 10  3   -24 53 36                          + 1083.849
  5 16 50 + 95 26  3   -22 30 30                          + 1078.231
  5 16 51 + 97 37  9   -20  4 52                          + 1071.736
  5 16 52 + 99 44  2   -17 36 58                          + 1064.387
  5 16 53 +101 47 24   -15  7  4                          + 1056.214
  5 16 54 +103 47 50   -12 35 25                          + 1047.247
  5 16 55 +105 45 59   -10  2 15                          + 1037.519
  5 16 56 +107 42 23   - 7 27 46                          + 1027.064
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  5 16 58 +111 32 18   - 2 15 39                          + 1004.122
   5 16 58 51  LONG.   +113 11 13  PASS NO.  328 +  993.416
  5 16 59 +113 26 56   + 0 21 35                          +  991.714
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  5 17  2 +119 16 15   + 8 15 32                          +  951.253
  5 17  3 +121 16 29   +10 53 32                          +  936.837
  5 17  4 +123 19 40   +13 31  8                          +  922.034
  5 17  5 +125 26 28   +16  8  4                          +  906.895
  5 17  6 +127 37 39   +18 44  1                          +  891.468
  5 17  7 +129 54  1   +21 18 37                          +  875.806
  5 17  8 +132 16 24   +23 51 31                          +  859.958
  5 17  9 +134 45 45   +26 22 15                          +  843.979
TOKAWA 108  5 17  9 59.455  S43.7299   1090.966    NE
  5 17 10 +137 23  3   +28 50 20                          +  827.921
  5 17 11 +140  9 24   +31 15 10                          +  811.838
  5 17 12 +143  5 56   +33 36  6                          +  795.785
TOKAWA 108  5 17 12 32.096  E45.3829   1063.732    NE          **
  5 17 13 +146 13 54   +35 52 24                          +  779.816
  5 17 14 +149 34 29   +38  3 11                          +  763.987
  5 17 15 +153  8 53   +40  7 30                          +  748.352
  5 17 16 +156 58 17   +42  4 14                          +  732.967
  5 17 17 +161  3 35   +43 52 12                          +  717.888
  5 17 18 +165 25 25   +45 30  5                          +  703.170  TWILIGHT
  5 17 19 +170  3 53   +46 56 28                          +  688.868  TWILIGHT
  5 17 20 +174 58 30   +48  9 55                          +  675.037  TWILIGHT
  5 17 21 -179 52  4   +49  9  4                          +  661.731  TWILIGHT
  5 17 22 -174 30  2   +49 52 36                          +  649.005  TWILIGHT
  5 17 23 -168 58 32   +50 19 27                          +  636.909  TWILIGHT
  5 17 24 -163 21 27   +50 28 52                          +  625.496
  5 17 25 -157 43  7   +50 20 27                          +  614.816
  5 17 26 -152  8  1   +49 54 14                          +  604.917
  5 17 27 -146 40 16   +49 10 40     40                   +  595.847
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  5 17 29 -136 20  8  +46 54 56                          +  580.365
  5 17 30 -131 32  9  +45 25  7                          +  574.036
  5 17 31 -127  0 21  +43 42 26                          +  568.695
  5 17 32 -122 44 53  +41 48 16                          +  564.377
STNFDU  98  5 17 32  8.505  N42.0171    735.162    SE
BOLDER  95  5 17 32 48.674  W71.6616   1382.373    SE         **
  5 17 33 -118 45 20  +39 43 57                          +  561.109
NELCAL 121  5 17 33 27.978  N54.7621    902.253    SE
GOLDST 103  5 17 33 29.934  N35.4764    672.693    SE
  5 17 34 -115  0 55  +37 30 45                          +  558.915
GOLDST 103  5 17 34 54.186  E42.5310    731.693    SE         **
STNFDU  98  5 17 34  2.070  E53.1303    872.561    SE         **
  5 17 35 -111 30 32  +35  9 50                          +  557.816
WHITES 111  5 17 35 35.735  W26.9543    619.283    SE         **
FTSILL 110  5 17 35 12.437  W69.9713   1308.252    SE         **
ARKANS 109  5 17 35  3.538  W82.5724   2023.385    SE         **
2RSTON  99  5 17 35 11.819  W86.4596   2360.534    SE         **
  5 17 36 -108 13  0  +32 42 17                          +  557.825
WHITES 111  5 17 36 28.037  S25.6149    613.410    SE
BOLDER  95  5 17 36 57.432  S69.0426   1270.992    SE
  5 17 37 -105  7  3  +30  9  2                          +  558.954
CPCAN1 107  5 17 37 43.842  W86.2077   2343.290    SE         **
  5 17 38 -102 11 27  +27 30 56                          +  561.206
  5 17 39  - 99 24 59  +24 48 48                         +  564.580
FTSILL 110  5 17 39 22.472  S71.3124   1378.712    SE
  5 17 40  - 96 46 30  +22  3 18                         +  569.069
  5 17 41  - 94 14 54  +19 15  3                         +  574.660
  5 17 42  - 91 49 11  +16 24 37                         +  581.334
ARKANS 109  5 17 42 26.589  S85.8371   2363.821    SE
  5 17 43  - 89 28 25  +13 32 32                         +  589.067
  5 17 44  - 87 11 43  +10 39 15                         +  597.828
  5 17 45  - 84 58 15  +  7 45 13                        +  607.580
  5 17 46  - 82 47 14  +  4 50 49                        +  618.283
  5 17 47  - 80 37 55  +  1 56 28                        +  629.888
QUITOE 125  5 17 47 57.415  S 2.3175    638.710    SE
QUITOE 125  5 17 47 52.780  W 1.8745    637.557    SE         **
  5 17 48  - 78 29 35  -  0 57 31                        +  642.345
  5 17 49  - 76 21 33  -  3 50 44                        +  655.596
  5 17 50  - 74 13  6  -  6 42 53                        +  669.582
  5 17 51  - 72  3 33  -  9 33 36                        +  684.237
LIMAPU 124  5 17 51 46.974  E51.6847   1045.760    SE         **
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  5 17 52 - 69 52 13   -12 22 33                          +  699.495
  5 17 53 - 67 38 24   -15  9 25                          +  715.283
  5 17 54 - 65 21 21   -17 53 49                          +  731.532
  5 17 55 - 63  0 20   -20 35 24                          +  748.165
  5 17 56 - 60 34 32   -23 13 46                          +  765.109
AGASTA 123   5 17 56   8.792   E59.4951    1329.313      SE        **
  5 17 57 - 58  3 11   -25 48 31                          +  782.284
  5 17 58 - 55 25 23   -28 19 12                          +  799.617
  5 17 59 - 52 40 17   -30 45 19                          +  817.031
  5 18  0 - 49 46 58   -33  6 21                          +  834.448
  5 18  1 - 46 44 30   -35 21 43                          +  851.797
  5 18  2 - 43 32  0   -37 30 46                          +  869.002
  5 18  3 - 40  8 38   -39 32 48                          +  885.993
  5 18  4 - 36 33 38   -41 27  4                          +  902.700
  5 18  5 - 32 46 24   -43 12 45                          +  919.057
  5 18  6 - 28 46 37   -44 48 59                          +  935.000
  5 18  7 - 24 34 16   -46 14 52                          +  950.468
  5 18  8 - 20  9 47   -47 29 31                          +  965.401
  5 18  9 - 15 34  4   -48 32  4                          +  979.746
  5 18 10 - 10 48 35   -49 21 46                          +  993.450
  5 18 11 -  5 55 23   -49 57 57                          + 1006.466
  5 18 12 -  0 56 59   -50 20  9                          + 1018.749
  5 18 13 +  4  3 43   -50 28  8                          + 1030.258
  5 18 14 +  9  3 40   -50 21 51                          + 1040.956
  5 18 15 + 13 59 50   -50  1 34                          + 1050.809
  5 18 16 + 18 49 28   -49 27 45                          + 1059.788
  5 18 17 + 23 30 13   -48 41  1                          + 1067.865  TWILIGHT
  5 18 18 + 28  0 16   -47 42 13                          + 1075.019  TWILIGHT
  5 18 19 + 32 18 23   -46 32 12                          + 1081.230  TWILIGHT
  5 18 20 + 36 23 50   -45 11 57                          + 1086.484  TWILIGHT
  5 18 21 + 40 16 22   -43 42 23                          + 1090.769  TWILIGHT
  5 18 22 + 43 56  7   -42  4 25                          + 1094.075  TWILIGHT
  5 18 23 + 47 23 33   -40 18 57                          + 1096.399  TWILIGHT
  5 18 24 + 50 39 17   -38 26 46                          + 1097.739  TWILIGHT
  5 18 25 + 53 44  6   -36 28 37                          + 1098.096
  5 18 26 + 56 38 50   -34 25  8                          + 1097.476
  5 18 27 + 59 24 22   -32 16 55                          + 1095.886
  5 18 28 + 62  1 36   -30  4 31                          + 1093.339
  5 18 29 + 64 31 23   -27 48 23                          + 1089.847
  5 18 30 + 66 54 32   -25 28 55                          + 1085.428
  5 18 31 + 69 11 52   -23  6 31                          + 1080.101
  5 18 32 + 71 24  6   -20 41 30                          + 1073.889
```

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  5 18 33 + 73 31 58   -18 14  9                          + 1066.816
  5 18 34 + 75 36  8   -15 44 46                          + 1058.909
  5 18 35 + 77 37 12   -13 13 33                          + 1050.200
  5 18 36 + 79 35 51   -10 40 46                          + 1040.718
  5 18 37 + 81 32 37   - 8  6 38                          + 1030.498
  5 18 38 + 83 28  5   - 5 31 19                          + 1019.576
  5 18 39 + 85 22 49   - 2 55  3                          + 1007.991
  5 18 40 + 87 17 22   - 0 18  1                          +  995.781
   5 18 40  6  LONG.   + 87 30 31   PASS NO.   329 +   994.316
  5 18 41 + 89 12 18   + 2 19 35                          +  982.988
  5 18 42 + 91  8 11   + 4 57 33                          +  969.656
  5 18 43 + 93  5 35   + 7 35 39                          +  955.829
  5 18 44 + 95  5  8   +10 13 40                          +  941.553
  5 18 45 + 97  7 28   +12 51 21                          +  926.874
  5 18 46 + 99 13 14   +15 28 25                          +  911.843
  5 18 47 +101 23 12   +18  4 36                          +  896.508
  5 18 48 +103 38  8   +20 39 32                          +  880.919
  5 18 49 +105 58 51   +23 12 51                          +  865.128
  5 18 50 +108 26 17   +25 44  8                          +  849.188
  5 18 51 +111  1 24   +28 12 54                          +  833.151
  5 18 52 +113 45 18   +30 38 34                          +  817.072
  5 18 53 +116 39  4   +33  0 31                          +  801.003
TOKAWA 108  5 18 53 47.384  W73.6719   1934.661     NE         **
  5 18 54 +119 43 55   +35 18  2                          +  785.001
  5 18 55 +123  1  5   +37 30 17                          +  769.120
  5 18 56 +126 31 47   +39 36 19                          +  753.414
  5 18 57 +130 17 10   +41 35  4                          +  737.940
  5 18 58 +134 18 15   +43 25 23                          +  722.753
TOKAWA 108  5 18 58 43.027  N63.1609   1348.661     NE
  5 18 59 +138 35 42   +45  5 57                          +  707.909
  5 19  0 +143  9 50   +46 35 24                          +  693.463  TWILIGHT
  5 19  1 +148  0 18   +47 52 19                          +  679.469  TWILIGHT
  5 19  2 +153  6  1   +48 55 15                          +  665.983  TWILIGHT
  5 19  3 +158 24 58   +49 42 55                          +  653.057  TWILIGHT
  5 19  4 +163 54 17   +50 14  9                          +  640.747  TWILIGHT
  5 19  5 +169 30 16   +50 28  8                          +  629.102
  5 19  6 +175  8 38   +50 24 20                          +  618.174
  5 19  7 -179 15  4   +50  2 43                          +  608.012
  5 19  8 -173 45  7   +49 23 35                          +  598.664
  5 19  9 -168 25 12   +48 27 40                          +  590.174
  5 19 10 -163 18 14   +47 15 58                          +  582.586
  5 19 11 -158 26 11   +45 49 43                          +  575.940
```

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  5 19 12 -153 50 10  +44 10 15                          +  570.272
  5 19 13 -149 30 30  +42 18 56                          +  565.617
  5 19 14 -145 26 54  +40 17  9                          +  562.004
  5 19 15 -141 38 40  +38  6  8                          +  559.459
STNFDU  98  5 19 15 17.626  W79.1880   1782.676    SE          **
  5 19 16 -138  4 45  +35 47  8                          +  558.004
GOLDST 103  5 19 16  9.804  W82.6329   2025.936    SE          **
  5 19 17 -134 43 59  +33 21 12                          +  557.654
  5 19 18 -131 35  9  +30 49 20                          +  558.421
  5 19 19 -128 36 58  +28 12 25                          +  560.312
  5 19 20 -125 48 14  +25 31 15                          +  563.326
  5 19 21 -123  7 46  +22 46 32                          +  567.459
STNFDU  98  5 19 21 22.399  S80.5727   1898.573    SE
  5 19 22 -120 34 27  +19 58 56                          +  572.700
  5 19 23 -118  7 18  +17  9  0                          +  579.031
GOLDST 103  5 19 23 31.887  S85.7650   2350.391    SE
  5 19 24 -115 45 19  +14 17 16                          +  586.430
  5 19 25 -113 27 37  +11 24 13                          +  594.868
  5 19 26 -111 13 21  + 8 30 19                          +  604.310
  5 19 27 -109  1 44  + 5 35 56                          +  614.717
  5 19 28 -106 52  1  + 2 41 30                          +  626.043
  5 19 29 -104 43 29  - 0 12 39                          +  638.237
  5 19 30 -102 35 24  - 3  6  8                          +  651.244
  5 19 31 -100 27  5  - 5 58 38                          +  665.006
  5 19 32 - 98 17 51  - 8 49 48                          +  679.457
  5 19 33 - 96  7  0  -11 39 17                          +  694.533
  5 19 34 - 93 53 51  -14 26 46                          +  710.164
  5 19 35 - 91 37 40  -17 11 53                          +  726.277
  5 19 36 - 89 17 41  -19 54 17                          +  742.798
  5 19 37 - 86 53  8  -22 33 33                          +  759.653
  5 19 38 - 84 23 14  -25  9 19                          +  776.765
  5 19 39 - 81 47  7  -27 41  8                          +  794.057
  5 19 40 - 79  3 55  -30  8 31                          +  811.454
  5 19 41 - 76 12 42  -32 30 57                          +  828.879
SNTAGO 122  5 19 41 16.215  W31.5192    956.697    SE          **
  5 19 42 - 73 12 36  -34 47 51                          +  846.258
SNTAGO 122  5 19 42 48.253  S26.7905    948.608    SE
  5 19 43 - 70  2 40  -36 58 37                          +  863.516
  5 19 44 - 66 42  4  -39  2 32                          +  880.582
  5 19 45 - 63 10  0  -40 58 53                          +  897.386
  5 19 46 - 59 25 51  -42 46 51                          +  913.861
  5 19 47 - 55 29 11  -44 25 35    44                    +  929.941
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  5 19 48 - 51 19 56   -45 54 11                          +  945.565
  5 19 49 - 46 58 22   -47 11 47                          +  960.672
  5 19 50 - 42 25 16   -48 17 29                          +  975.208
  5 19 51 - 37 42  0   -49 10 30                          +  989.120
  5 19 52 - 32 50 27   -49 50  9                          + 1002.358
  5 19 53 - 27 53  1   -50 15 54                          + 1014.877
  5 19 54 - 22 52 33   -50 27 28                          + 1026.634
  5 19 55 - 17 52  3   -50 24 46                          + 1037.592
  5 19 56 - 12 54 36   -50  7 57                          + 1047.716
  5 19 57 -  8  3  2   -49 37 28                          + 1056.975
  5 19 58 -  3 19 49   -48 53 53                          + 1065.341  TWILIGHT
  5 19 59 +  1 13  6   -47 58  1                          + 1072.790  TWILIGHT
  5 20  0 +  5 34 20   -46 50 42                          + 1079.303  TWILIGHT
  5 20  1 +  9 43  0   -45 32 55                          + 1084.863  TWILIGHT
  5 20  2 + 13 38 47   -44  5 34                          + 1089.457  TWILIGHT
  5 20  3 + 17 21 44   -42 29 38                          + 1093.077  TWILIGHT
  5 20  4 + 20 52 12   -40 45 57                          + 1095.716  TWILIGHT
  5 20  5 + 24 10 47   -38 55 22                          + 1097.371  TWILIGHT
  5 20  6 + 27 18 15   -36 58 38                          + 1098.043
JOBURG 118  5 20  6 18.485  S53.8097   1652.920     NE
  5 20  7 + 30 15 25   -34 56 25                          + 1097.737
  5 20  8 + 33  3 10   -32 49 20                          + 1096.459
  5 20  9 + 35 42 24   -30 37 56                          + 1094.220
  5 20 10 + 38 13 57   -28 22 42                          + 1091.032
  5 20 11 + 40 38 40   -26  4  3                          + 1086.911
JOBURG 118  5 20 11  0.676  E56.8744   1727.130     NE         **
  5 20 12 + 42 57 22   -23 42 21                          + 1081.877
  5 20 13 + 45 10 48   -21 17 59                          + 1075.950
  5 20 14 + 47 19 40   -18 51 12                          + 1069.155
  5 20 15 + 49 24 40   -16 22 19                          + 1061.519
  5 20 16 + 51 26 27   -13 51 34                          + 1053.068
  5 20 17 + 53 25 37   -11 19 11                          + 1043.837
  5 20 18 + 55 22 46   - 8 45 24                          + 1033.856
  5 20 19 + 57 18 30   - 6 10 23                          + 1023.162
  5 20 20 + 59 13 20   - 3 34 23                          + 1011.791
  5 20 21 + 61  7 51   - 0 57 33                          +  999.784
   5 20 21 21  LONG.   + 61 49 50  PASS NO.  330 +  995.171
  5 20 22 + 63  2 36   + 1 39 53                          +  987.180
  5 20 23 + 64 58  9   + 4 17 44                          +  974.023
  5 20 24 + 66 55  5   + 6 55 46                          +  960.355
  5 20 25 + 68 54  0   + 9 33 47                          +  946.224
  5 20 26 + 70 55 31   +12 11 32                          +  931.675
```

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  5 20 27 + 73  0 19  +14 48 45                          +  916.756
  5 20 28 + 75  9  7  +17 25  8                          +  901.518
  5 20 29 + 77 22 39  +20  0 22                          +  886.009
  5 20 30 + 79 41 46  +22 34  6                          +  870.281
  5 20 31 + 82  7 21  +25  5 54                          +  854.386
  5 20 32 + 84 40 22  +27 35 18                          +  838.377
  5 20 33 + 87 21 52  +30  1 46                          +  822.306
  5 20 34 + 90 12 57  +32 24 41                          +  806.229
  5 20 35 + 93 14 47  +34 43 22                          +  790.199
  5 20 36 + 96 28 37  +36 57  0                          +  774.271
  5 20 37 + 99 55 41  +39  4 41                          +  758.501
  5 20 38 +103 37  8  +41  5 22                          +  742.944
  5 20 39 +107 34  1  +42 57 56                          +  727.656
  5 20 40 +111 47  9  +44 41  7                          +  712.692
  5 20 41 +116 16 55  +46 13 32                          +  698.106  TWILIGHT
  5 20 42 +121  3 10  +47 33 47                          +  683.956  TWILIGHT
  5 20 43 +126  5  2  +48 40 26                          +  670.295  TWILIGHT
  5 20 44 +131 20 43  +49 32  9                          +  657.178  TWILIGHT
  5 20 45 +136 47 37  +50  7 43                          +  644.657  TWILIGHT
TOKAWA 108  5 20 45  6.008  N77.9846   1893.478    NE
  5 20 46 +142 22 11  +50 26 12                          +  632.786  TWILIGHT
  5 20 47 +148  0 18  +50 27  2                          +  621.615
  5 20 48 +153 37 29  +50 10  1                          +  611.195
  5 20 49 +159  9 24  +49 35 22                          +  601.573
  5 20 50 +164 32 11  +48 43 43                          +  592.796
  5 20 51 +169 42 41  +47 36  1                          +  584.908
  5 20 52 +174 38 43  +46 13 26                          +  577.948
  5 20 53 +179 18 55  +44 37 16                          +  571.957
  5 20 54 -176 17 12  +42 48 54                          +  566.968
  5 20 55 -172  9 30  +40 49 43                          +  563.013
  5 20 56 -168 17 22  +38 40 59                          +  560.119
  5 20 57 -164 39 50  +36 23 57                          +  558.308
  5 20 58 -161 15 47  +33 59 43                          +  557.599
BSANDS 100  5 20 58 27.014  N71.4817   1368.439    SE
  5 20 59 -158  3 58  +31 29 18                          +  558.006
  5 21  0 -155  3  8  +28 53 37                          +  559.534
  5 21  1 -152 12  2  +26 13 28                          +  562.188
  5 21  2 -149 29 31  +23 29 36                          +  565.964
BSANDS 100  5 21  2 31.425  E71.1525   1377.545    SE        **
  5 21  3 -146 54 26  +20 42 40                          +  570.851
  5 21  4 -144 25 45  +17 53 16                          +  576.837
  5 21  5 -142  2 30  +15  1 56                          +  583.899
```

5	21	6	-139	43	44	+12	9	9	+	592.010	
5	21	7	-137	28	38	+ 9	15	24	+	601.137	
5	21	8	-135	16	24	+ 6	21	4	+	611.244	
5	21	9	-133	6	14	+ 3	26	34	+	622.284	
5	21	10	-130	57	26	+ 0	32	17	+	634.209	
5	21	11	-128	49	15	- 2	21	27	+	646.967	
5	21	12	-126	41	2	- 5	14	17	+	660.498	
5	21	13	-124	32	4	- 8	5	52	+	674.740	
5	21	14	-122	21	40	-10	55	52	+	689.627	
5	21	15	-120	9	7	-13	43	57	+	705.092	
5	21	16	-117	53	44	-16	29	45	+	721.061	
5	21	17	-115	34	46	-19	12	55	+	737.463	
5	21	18	-113	11	25	-21	53	5	+	754.222	
5	21	19	-110	42	55	-24	29	51	+	771.262	
5	21	20	-108	8	25	-27	2	45	+	788.507	
5	21	21	-105	27	2	-29	31	22	+	805.880	
5	21	22	-102	37	54	-31	55	9	+	823.305	
5	21	23	- 99	40	5	-34	13	34	+	840.706	
5	21	24	- 96	32	41	-36	26	0	+	858.011	
5	21	25	- 93	14	48	-38	31	46	+	875.146	
5	21	26	- 89	45	39	-40	30	9	+	892.040	
5	21	27	- 86	4	32	-42	20	21	+	908.626	
5	21	28	- 82	11	0	-44	1	32	+	924.837	
5	21	29	- 78	4	49	-45	32	48	+	940.611	
5	21	30	- 73	46	13	-46	53	17	+	955.887	
5	21	31	- 69	15	52	-48	2	5	+	970.608	
5	21	32	- 64	34	56	-48	58	23	+	984.722	
5	21	33	- 59	45	10	-49	41	28	+	998.178	
5	21	34	- 54	48	54	-50	10	46	+	1010.928	
5	21	35	- 49	48	50	-50	25	55	+	1022.931	
5	21	36	- 44	47	59	-50	26	47	+	1034.145	
5	21	37	- 39	49	26	-50	13	28	+	1044.536	
5	21	38	- 34	56	5	-49	46	21	+	1054.072	
5	21	39	- 30	10	31	-49	5	59	+	1062.723	TWILIGHT
5	21	40	- 25	34	49	-48	13	6	+	1070.466	TWILIGHT
5	21	41	- 21	10	32	-47	8	34	+	1077.279	TWILIGHT
5	21	42	- 16	58	38	-45	53	17	+	1083.144	TWILIGHT
5	21	43	- 12	59	36	-44	28	14	+	1088.047	TWILIGHT
5	21	44	- 9	13	27	-42	54	21	+	1091.979	TWILIGHT
5	21	45	- 5	39	54	-41	12	31	+	1094.932	TWILIGHT
5	21	46	- 2	18	24	-39	23	35	+	1096.902	TWILIGHT
5	21	47	+ 0	51	46	-37	28	18	+	1097.890	TWILIGHT

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 5 21 48 +  3 51 26   -35 27 24                          + 1097.898
 5 21 49 +  6 41 27   -33 21 29                          + 1096.931
 5 21 50 +  9 22 43   -31 11  7                          + 1095.001
 5 21 51 + 11 56  6   -28 56 48                          + 1092.118
 5 21 52 + 14 22 26   -26 38 58                          + 1088.298
JOBURG 118  5 21 52 15.738  W59.0032    1796.310     NE        **
 5 21 53 + 16 42 33   -24 18  1                          + 1083.558
 5 21 54 + 18 57 13   -21 54 18                          + 1077.919
 5 21 55 + 21  7  9   -19 28  7                          + 1071.405
 5 21 56 + 23 13  2   -16 59 45                          + 1064.040
 5 21 57 + 25 15 32   -14 29 28                          + 1055.854
 5 21 58 + 27 15 17   -11 57 30                          + 1046.875
 5 21 59 + 29 12 52   - 9 24  4                          + 1037.136
 5 22  0 + 31  8 52   - 6 49 23                          + 1026.673
 5 22  1 + 33  3 50   - 4 13 38                          + 1015.522
 5 22  2 + 34 58 21   - 1 37  2                          + 1003.722
  5 22  2 37  LONG.   + 36  9  6  PASS NO.   331 +   996.059
 5 22  3 + 36 52 58   + 1  0 14                          +  991.310
 5 22  4 + 38 48 14   + 3 37 57                          +  978.333
 5 22  5 + 40 44 43   + 6 15 56                          +  964.830
 5 22  6 + 42 43  2   + 8 53 56                          +  950.849
 5 22  7 + 44 43 48   +11 31 43                          +  936.434
 5 22  8 + 46 47 40   +14  9  3                          +  921.634
 5 22  9 + 48 55 21   +16 45 38                          +  906.498
 5 22 10 + 51  7 34   +19 21  9                          +  891.074
 5 22 11 + 53 25  7   +21 55 15                          +  875.414
 5 22 12 + 55 48 56   +24 27 31                          +  859.570
 5 22 13 + 58 19 55   +26 57 32                          +  843.594
 5 22 14 + 60 59  6   +29 24 45                          +  827.538
 5 22 15 + 63 47 34   +31 48 36                          +  811.458
 5 22 16 + 66 46 29   +34  8 24                          +  795.407
 5 22 17 + 69 57  5   +36 23 21                          +  779.440
 5 22 18 + 73 20 34   +38 32 37                          +  763.612
 5 22 19 + 76 58  9   +40 35 10                          +  747.978
 5 22 20 + 80 50 55   +42 29 54                          +  732.594
 5 22 21 + 84 59 44   +44 15 34                          +  717.516
 5 22 22 + 89 25  9   +45 50 52                          +  702.798  TWILIGHT
 5 22 23 + 94  7  8   +47 14 22                          +  688.497  TWILIGHT
 5 22 24 + 99  5  1   +48 24 38                          +  674.667  TWILIGHT
 5 22 25 +104 17 17   +49 20 18                          +  661.363  TWILIGHT
 5 22 26 +109 41 30   +50  0  8                          +  648.638  TWILIGHT
 5 22 27 +115 14 24   +50 23  6                          +  636.546  TWILIGHT
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  5 22 28 +120 51 56   +50 28 32                          +   625.138
  5 22 29 +126 29 43   +50 16  7                          +   614.464
  5 22 30 +132  3 20   +49 46  0                          +   604.574
TOKAWA 108  5 22 30 58.563  N77.2676    1744.320     SE
  5 22 31 +137 28 46   +48 58 42                          +   595.514
  5 22 32 +142 42 40   +47 55  3                          +   587.329
  5 22 33 +147 42 34   +46 36 13                          +   580.060
  5 22 34 +152 26 55   +45  3 27                          +   573.748
  5 22 35 +156 55  2   +43 18  8                          +   568.428
  5 22 36 +161  6 52   +41 21 38                          +   564.133
  5 22 37 +165  2 58   +39 15 16                          +   560.892
  5 22 38 +168 44 10   +37  0 17                          +   558.728
  5 22 39 +172 11 36   +34 37 49                          +   557.661
  5 22 40 +175 26 29   +32  8 55                          +   557.706
  5 22 41 +178 30  4   +29 34 30                          +   558.873
  5 22 42 -178 36 26   +26 55 26                          +   561.165
  5 22 43 -175 51 46   +24 12 27                          +   564.582
BSANDS 100  5 22 43 46.982  W75.9703    1609.833     SE         **
  5 22 44 -173 14 51   +21 26 15                          +   569.115
  5 22 45 -170 44 36   +18 37 24                          +   574.752
  5 22 46 -168 20  0   +15 46 30                          +   581.474
  5 22 47 -166  0  8   +12 54  2                          +   589.254
  5 22 48 -163 44  9   +10  0 27                          +   598.064
  5 22 49 -161 31 13   + 7  6 12                          +   607.864
BSANDS 100  5 22 49 47.471  S81.6083    2083.249     SE
  5 22 50 -159 20 33   + 4 11 41                          +   618.614
  5 22 51 -157 11 25   + 1 17 16                          +   630.266
  5 22 52 -155  3  7   - 1 36 41                          +   642.767
  5 22 53 -152 54 56   - 4 29 50                          +   656.061
  5 22 54 -150 46 12   - 7 21 48                          +   670.086
  5 22 55 -148 36 11   -10 12 17                          +   684.779
  5 22 56 -146 24 14   -13  0 57                          +   700.070
  5 22 57 -144  9 36   -15 47 25                          +   715.889
  5 22 58 -141 51 35   -18 31 21                          +   732.164
  5 22 59 -139 29 23   -21 12 22                          +   748.819
  5 23  0 -137  2 13   -23 50  5                          +   765.780
  5 23  1 -134 29 17   -26 24  4                          +   782.969
  5 23  2 -131 49 42   -28 53 52                          +   800.311
  5 23  3 -129  2 34   -31 18 59                          +   817.728
  5 23  4 -126  7  0   -33 38 52                          +   835.146
  5 23  5 -123  2  3   -35 52 55                          +   852.489
  5 23  6 -119 46 51   -38  0 30                          +   869.685
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  5 23  7 -116 20 34   -40  0 52                          +  886.663
  5 23  8 -112 42 27   -41 53 15                          +  903.353
  5 23  9 -108 52  1   -43 36 50                          +  919.689
  5 23 10 -104 48 58   -45 10 43                          +  935.607
  5 23 11 -100 33 23   -46 34  2                          +  951.046
  5 23 12 - 96  5 50   -47 45 53                          +  965.949
  5 23 13 - 91 27 20   -48 45 26                          +  980.259
  5 23 14 - 86 39 32   -49 31 54                          +  993.928
  5 23 15 - 81 44 34   -50  4 43                          + 1006.905
  5 23 16 - 76 45  7   -50 23 27                          + 1019.148
  5 23 17 - 71 44  6   -50 27 54                          + 1030.615
  5 23 18 - 66 44 37   -50 18  8                          + 1041.271
  5 23 19 - 61 49 39   -49 54 25                          + 1051.080
  5 23 20 - 57  1 52   -49 17 18                          + 1060.014
  5 23 21 - 52 23 29   -48 27 28                          + 1068.048  TWILIGHT
  5 23 22 - 47 56 11   -47 25 45                          + 1075.158  TWILIGHT
  5 23 23 - 43 41  6   -46 13  3                          + 1081.326  TWILIGHT
  5 23 24 - 39 38 48   -44 50 21                          + 1086.538  TWILIGHT
  5 23 25 - 35 49 25   -43 18 35                          + 1090.780  TWILIGHT
  5 23 26 - 32 12 45   -41 38 38                          + 1094.047  TWILIGHT
  5 23 27 - 28 48 18   -39 51 24                          + 1096.332  TWILIGHT
  5 23 28 - 25 35 22   -37 57 38                          + 1097.635  TWILIGHT
  5 23 29 - 22 33  9   -35 58  4                          + 1097.957
  5 23 30 - 19 40 48   -33 53 21                          + 1097.303
  5 23 31 - 16 57 27   -31 44  3                          + 1095.683
  5 23 32 - 14 22 12   -29 30 40                          + 1093.107
  5 23 33 - 11 54 11   -27 13 41                          + 1089.588
  5 23 34 -  9 32 35   -24 53 30                          + 1085.145
  5 23 35 -  7 16 39   -22 30 27                          + 1079.796
  5 23 36 -  5  5 38   -20  4 52                          + 1073.564
  5 23 37 -  2 58 48   -17 37  3                          + 1066.474
  5 23 38 -  0 55 32   -15  7 15                          + 1058.553
SANANA 116  5 23 38 27.369  S64.8854   1970.103     NE
  5 23 39 +  1  4 50   -12 35 42                          + 1049.831
  5 23 40 +  3  2 52   -10  2 39                          + 1040.338
  5 23 41 +  4 59 11   - 7 28 17                          + 1030.110
  5 23 42 +  6 54 20   - 4 52 49                          + 1019.182
  5 23 43 +  8 48 54   - 2 16 27                          + 1007.592
SANANA 116  5 23 43 52.015  E56.8832   1600.160     NE        **
   5 23 43 52  LONG.  + 10 28 21  PASS NO.  332 +  996.982
  5 23 44 + 10 43 23  + 0 20 38                           +  995.379
  5 23 45 + 12 38 24  + 2 58 14                           +  982.584
```

5	23	46	+	14	34	30	+	5	36	7			+	969.252	
5	23	47	+	16	32	16	+	8	14	5			+	955.425	
5	23	48	+	18	32	19	+10	51	55				+	941.150	
5	23	49	+	20	35	18	+13	29	20				+	926.474	
5	23	50	+	22	41	53	+16	6	5				+	911.445	
5	23	51	+	24	52	50	+18	41	51				+	896.112	
5	23	52	+	27	8	55	+21	16	18				+	880.526	
5	23	53	+	29	31	1	+23	49	2				+	864.739	
5	23	54	+	32	0	2	+26	19	37				+	848.802	
5	23	55	+	34	36	58	+28	47	34				+	832.768	
5	23	56	+	37	22	54	+31	12	17				+	816.690	
5	23	57	+	40	18	59	+33	33	8				+	800.624	
5	23	58	+	43	26	25	+35	49	22				+	784.623	
5	23	59	+	46	46	25	+38	0	8				+	768.743	
6	0	0	+	50	20	13	+40	4	28				+	753.039	
6	0	1	+	54	8	55	+42	1	17				+	737.565	
6	0	2	+	58	13	29	+43	49	22				+	722.379	
6	0	3	+	62	34	32	+45	27	26				+	707.535	
6	0	4	+	67	12	12	+46	54	5				+	693.089	TWILIGHT
6	0	5	+	72	6	1	+48	7	52				+	679.097	TWILIGHT
6	0	6	+	77	14	41	+49	7	25				+	665.611	TWILIGHT
6	0	7	+	82	36	3	+49	51	25				+	652.688	TWILIGHT
6	0	8	+	88	6	58	+50	18	49				+	640.381	TWILIGHT
6	0	9	+	93	43	38	+50	28	50				+	628.740	
6	0	10	+	99	21	43	+50	21	3				+	617.818	
6	0	11	+104	56	46		+49	55	29				+	607.664	
6	0	12	+110	24	37		+49	12	33				+	598.326	
6	0	13	+115	41	43		+48	13	4				+	589.848	
6	0	14	+120	45	24		+46	58	3				+	582.274	
6	0	15	+125	33	51		+45	28	47				+	575.645	
6	0	16	+130	6	10		+43	46	36				+	569.997	
6	0	17	+134	22	11		+41	52	53				+	565.365	
TOKAWA	108	6	0	17	44.369		N51.4447				851.166		SE		
6	0	18	+138	22	17		+39	48	58				+	561.778	
6	0	19	+142	7	15		+37	36	6				+	559.262	
6	0	20	+145	38	9		+35	15	29				+	557.838	
TOKAWA	108	6	0	20	10.377		E60.2500				1011.498		SE	**	
6	0	21	+148	56	10		+32	48	9				+	557.523	
6	0	22	+152	2	34		+30	15	5				+	558.328	
6	0	23	+154	58	35		+27	37	9				+	560.258	
6	0	24	+157	45	26		+24	55	6				+	563.315	
6	0	25	+160	24	16		+22	9	39				+	567.492	

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  6   0 26 +162 56 11   +19 21 25                          +   572.779
  6   0 27 +165 22 10   +16 30 59                          +   579.157
  6   0 28 +167 43 12   +13 38 51                          +   586.604
  6   0 29 +170  0  8   +10 45 29                          +   595.090
  6   0 30 +172 13 49   + 7 51 20                          +   604.581
  6   0 31 +174 25  2   + 4 56 49                          +   615.035
  6   0 32 +176 34 30   + 2  2 18                          +   626.407
  6   0 33 +178 42 59   - 0 51 51                          +   638.647
  6   0 34 -179  8 50   - 3 45 16                          +   651.697
  6   0 35 -177  0 16   - 6 37 37                          +   665.499
  6   0 36 -174 50 37   - 9 28 34                          +   679.989
  6   0 37 -172 39 11   -12 17 46                          +   695.100
SAMOAI 114  6  0 37 52.048  S 3.7496     710.034     SE
SAMOAI 114  6  0 37 43.561  W 3.1470     707.388     SE         **
  6   0 38 -170 25 16   -15  4 53                          +   710.762
  6   0 39 -168  8  8   -17 49 33                          +   726.902
  6   0 40 -165 47  2   -20 31 24                          +   743.446
  6   0 41 -163 21 11   -23 10  3                          +   760.320
  6   0 42 -160 49 45   -25 45  5                          +   777.447
  6   0 43 -158 11 53   -28 16  3                          +   794.750
  6   0 44 -155 26 44   -30 42 27                          +   812.152
  6   0 45 -152 33 20   -33  3 46                          +   829.578
  6   0 46 -149 30 48   -35 19 25                          +   846.953
  6   0 47 -146 18 13   -37 28 44                          +   864.204
  6   0 48 -142 54 45   -39 31  3                          +   881.258
  6   0 49 -139 19 38   -41 25 34                          +   898.045
  6   0 50 -135 32 16   -43 11 29                          +   914.500
  6   0 51 -131 32 21   -44 47 57                          +   930.556
  6   0 52 -127 19 50   -46 14  3                          +   946.152
  6   0 53 -122 55  8   -47 28 53                          +   961.230
  6   0 54 -118 19 11   -48 31 38                          +   975.732
  6   0 55 -113 33 27   -49 21 28                          +   989.608
  6   0 56 -108 40  0   -49 57 47                          +  1002.808
  6   0 57 -103 41 19   -50 20  5                          +  1015.287
  6   0 58 - 98 40 21   -50 28  8                          +  1027.004
  6   0 59 - 93 40  7   -50 21 54                          +  1037.920
  6   1  0 - 88 43 41   -50  1 39                          +  1048.000
  6   1  1 - 83 53 49   -49 27 49                          +  1057.215
  6   1  2 - 79 12 52   -48 41  5                          +  1065.537  TWILIGHT
  6   1  3 - 74 42 38   -47 42 15                          +  1072.942  TWILIGHT
  6   1  4 - 70 24 22   -46 32 12                          +  1079.412  TWILIGHT
  6   1  5 - 66 18 49   -45 11 54                          +  1084.930  TWILIGHT
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  6   1   6 -  62 26 12   -43 42 18                                  +  1089.482  TWILIGHT
  6   1   7 -  58 46 23   -42  4 19                                  +  1093.061  TWILIGHT
  6   1   8 -  55 18 55   -40 18 48                                  +  1095.660  TWILIGHT
  6   1   9 -  52  3 10   -38 26 36                                  +  1097.278  TWILIGHT
  6   1  10 -  48 58 21   -36 28 25                                  +  1097.915
  6   1  11 -  46  3 38   -34 24 55                                  +  1097.575
  6   1  12 -  43 18  7   -32 16 43                                  +  1096.265
  6   1  13 -  40 40 55   -30  4 19                                  +  1093.996
  6   1  14 -  38 11 11   -27 48 12                                  +  1090.781
  6   1  15 -  35 48  4   -25 28 47                                  +  1086.636
  6   1  16 -  33 30 49   -23  6 26                                  +  1081.579
  6   1  17 -  31 18 38   -20 41 28                                  +  1075.633
  6   1  18 -  29 10 51   -18 14 12                                  +  1068.820
  6   1  19 -  27  6 46   -15 44 54                                  +  1061.168
  6   1  20 -  25  5 46   -13 13 47                                  +  1052.704
  6   1  21 -  23  7 13   -10 41  7                                  +  1043.461
  6   1  22 -  21 10 33   - 8  7  5                                  +  1033.472
  6   1  23 -  19 15 11   - 5 31 55                                  +  1022.770
  6   1  24 -  17 20 34   - 2 55 47                                  +  1011.394
  6   1  25 -  15 26  8   - 0 19 54                                  +   999.383
SANANA 116   6   1 25   7.0Fe   M69 0863    2071.746      NE            **
    6   1 25   7  LONG.   - 15 12 19  PASS NO.   333 +   997.867
  6   1  26 -  13 31 20   + 2 18 32                                  +   986.777
  6   1  27 -  11 35 35   + 4 56 20                                  +   973.618
  6   1  28 -   9 38 20   + 7 34 16                                  +   959.952
  6   1  29 -   7 38 58   +10 12  6                                  +   945.821
  6   1  30 -   5 36 50   +12 49 37                                  +   931.274
  6   1  31 -   3 31 15   +15 26 31                                  +   916.358
  6   1  32 -   1 21 31   +18  2 31                                  +   901.122
SANANA 116   6   1 32 36.452   N78.9745    2471.214      NE
  6   1  33 +   0 53  9   +20 37 17                                  +   885.615
  6   1  34 +   3 13 35   +23 10 26                                  +   869.890
  6   1  35 +   5 40 41   +25 41 34                                  +   853.998
  6   1  36 +   8 15 27   +28 10 11                                  +   837.991
HOLBRG 101   6   1 36 10.273   S81.8797    2583.848      NE
  6   1  37 +  10 58 57   +30 35 44                                  +   821.923
  6   1  38 +  13 52 15   +32 57 36                                  +   805.848
  6   1  39 +  16 56 36   +35 15  3                                  +   789.820
  6   1  40 +  20 13 13   +37 27 15                                  +   773.893
  6   1  41 +  23 43 18   +39 33 18                                  +   758.124
  6   1  42 +  27 28  2   +41 32  6                                  +   742.568
  6   1  43 +  31 28 22   +43 22 32                                  +   727.280
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  6   1 44 + 35 45  4   +45  3 16                          +   712.316
  6   1 45 + 40 18 24   +46 32 57                          +   697.731  TWILIGHT
  6   1 46 + 45  8  4   +47 50 10                          +   683.582  TWILIGHT
  6   1 47 + 50 13  0   +48 53 30                          +   669.922  TWILIGHT
  6   1 48 + 55 31 15   +49 41 37                          +   656.806  TWILIGHT
  6   1 49 + 60 59 59   +50 13 23                          +   644.288  TWILIGHT
  6   1 50 + 66 35 29   +50 27 56                          +   632.421  TWILIGHT
  6   1 51 + 72 13 34   +50 24 46                          +   621.255
  6   1 52 + 77 49 45   +50  3 47                          +   610.843
  6   1 53 + 83 19 46   +49 25 18                          +   601.230
  6   1 54 + 88 39 54   +48 30  1                          +   592.464
  6   1 55 + 93 47 13   +47 18 55                          +   584.589
  6   1 56 + 98 39 43   +45 53 14                          +   577.646
  6   1 57 +103 16 14   +44 14 17                          +   571.674
  6   1 58 +107 36 27   +42 23 26                          +   566.707
  6   1 59 +111 40 36   +40 22  3                          +   562.777
  6   2  0 +115 29 23   +38 11 24                          +   559.911
  6   2  1 +119  3 49   +35 52 41                          +   558.131
TOKAWA 108  6  2  1 25.954  W77.8159   1693.600     SE          **
  6   2  2 +122 25  4   +33 27  0                          +   557.457
  6   2  3 +125 34 22   +30 55 20                          +   557.899
  6   2  4 +128 32 58   +28 18 35                          +   559.468
  6   2  5 +131 22  6   +25 37 31                          +   562.163
  6   2  6 +134  2 56   +22 52 53                          +   565.983
  6   2  7 +136 36 33   +20  5 18                          +   570.916
TOKAWA 108  6  2  7 18.100  580.3250   1889.095     SE
  6   2  8 +139  4  0   +17 15 22                          +   576.949
  6   2  9 +141 26 15   +14 23 36                          +   584.058
  6   2 10 +143 44 11   +11 30 29                          +   592.218
  6   2 11 +145 58 40   + 8 36 28                          +   601.394
  6   2 12 +148 10 28   + 5 41 58                          +   611.548
  6   2 13 +150 20 21   + 2 47 23                          +   622.636
  6   2 14 +152 29  3   - 0  6 56                          +   634.607
  6   2 15 +154 37 17   - 3  0 37                          +   647.409
  6   2 16 +156 45 43   - 5 53 20                          +   660.981
  6   2 17 +158 55  4   - 8 44 43                          +   675.262
  6   2 18 +161  6  0   -11 34 27                          +   690.185
  6   2 19 +163 19 15   -14 22 10                          +   705.682
  6   2 20 +165 35 32   -17  7 33                          +   721.680
  6   2 21 +167 55 36   -19 50 13                          +   738.106
  6   2 22 +170 20 12   -22 29 46                          +   754.886
  6   2 23 +172 50 10   -25  5 49                          +   771.942
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  6   2 24 +175 26 21   -27 37 55                          +  789.198
  6   2 25 +178  9 38   -30  5 34                          +  806.578
  6   2 26 -178 59  6   -32 28 17                          +  824.005
  6   2 27 -175 58 55   -34 45 28                          +  841.405
  6   2 28 -172 48 54   -36 56 31                          +  858.702
  6   2 29 -169 28 13   -39  0 42                          +  875.826
  6   2 30 -165 56  2   -40 57 19                          +  892.705
  6   2 31 -162 11 46   -42 45 32                          +  909.272
  6   2 32 -158 14 58   -44 24 30                          +  925.460
  6   2 33 -154  5 32   -45 53 19                          +  941.207
  6   2 34 -149 43 46   -47 11  7                          +  956.454
  6   2 35 -145 10 27   -48 17  0                          +  971.143
  6   2 36 -140 26 56   -49 10 10                          +  985.222
  6   2 37 -135 35  8   -49 49 57                          +  998.640
  6   2 38 -130 37 26   -50 15 49                          + 1011.352
  6   2 39 -125 36 40   -50 27 27                          + 1023.313
  6   2 40 -120 35 54   -50 24 48                          + 1034.485
  6   2 41 -115 38 11   -50  8  1                          + 1044.834
  6   2 42 -110 46 23   -49 37 32                          + 1054.325
  6   2 43 -106  2 57   -48 53 57                          + 1062.933  TWILIGHT
  6   2 44 -101 29 50   -47 58  3                          + 1070.631  TWILIGHT
  6   2 45 - 97  8 28   -46 50 43                          + 1077.401  TWILIGHT
  6   2 46 - 92 59 39   -45 32 53                          + 1083.223  TWILIGHT
  6   2 47 - 89  3 47   -44  5 30                          + 1088.084  TWILIGHT
  6   2 48 - 85 20 46   -42 29 31                          + 1091.975  TWILIGHT
  6   2 49 - 81 50 16   -40 45 48                          + 1094.889  TWILIGHT
  6   2 50 - 78 31 39   -38 55 11                          + 1096.821  TWILIGHT
  6   2 51 - 75 24 11   -36 58 26                          + 1097.772  TWILIGHT
  6   2 52 - 72 27  1   -34 56 12                          + 1097.746
AGASTA 123  6  2 52 46.300  S51.6433   1596.268    NE
SNTAGO 122  6  2 52 37.731  S 3.0735   1097.885    NE
SNTAGO 122  6  2 52 50.606  E 3.3502   1097.876    NE        **
  6   2 53 - 69 39 17   -32 49  7                          + 1096.748
  6   2 54 - 67  0  6   -30 37 44                          + 1094.787
  6   2 55 - 64 28 35   -28 22 30                          + 1091.877
  6   2 56 - 62  3 55   -26  3 53                          + 1088.031
  6   2 57 - 59 45 17   -23 42 15                          + 1083.268
AGASTA 123  6  2 57  1.877  E52.1936   1591.954    NE        **
  6   2 58 - 57 31 55   -21 17 55                          + 1077.608
  6   2 59 - 55 23  7   -18 51 13                          + 1071.076
  6   3  0 - 53 18 11   -16 22 25                          + 1063.695
  6   3  1 - 51 16 29   -13 51 46   55                     + 1055.494
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  6   3   2 -  49 17 25   -11 19 29                          + 1046.503
  6   3   3 -  47 20 20   - 8 45 49                          + 1036.756
  6   3   4 -  45 24 44   - 6 10 56                          + 1026.285
  6   3   5 -  43 30  0   - 3 35  4                          + 1015.127
  6   3   6 -  41 35 36   - 0 58 23                          + 1003.322
    6   3   6 22  LONG.   - 40 53  0  PASS NO.   334 +   998.709
  6   3   7 -  39 40 59   + 1 38 54                          +   990.909
  6   3   8 -  37 45 34   + 4 16 35                          +   977.930
  6   3   9 -  35 48 47   + 6 54 27                          +   964.427
  6   3  10 -  33 50  2   + 9 32 18                          +   950.446
  6   3  11 -  31 48 42   +12  9 52                          +   936.033
  6   3  12 -  29 44  6   +14 46 54                          +   921.235
  6   3  13 -  27 35 32   +17 23  7                          +   906.100
  6   3  14 -  25 22 15   +19 58 11                          +   890.679
  6   3  15 -  23  3 24   +22 31 45                          +   875.023
  6   3  16 -  20 38  8   +25  3 23                          +   859.181
  6   3  17 -  18  5 28   +27 32 39                          +   843.207
  6   3  18 -  15 24 21   +29 58 59                          +   827.154
  6   3  19 -  12 33 43   +32 21 49                          +   811.076
  6   3  20 -   9 32 21   +34 40 25                          +   795.027
  6   3  21 -   6 19  4   +36 54  0                          +   779.060
  6   3  22 -   2 52 36   +39  1 40                          +   763.233
  6   3  23 +   0 48 12   +41  2 24                          +   747.600
  6   3  24 +   4 44 23   +42 55  4                          +   732.216
HDLBRG 101   6   3 24 56.646   S40.9854     916.521     NE
  6   3  25 +   8 56 45   +44 38 23                          +   717.138
  6   3  26 +  13 25 44   +46 11  2                          +   702.421   TWILIGHT
HDLBRG 101   6   3 28 50.985   E71.5602    1582.905     NE          **
  6   3  27 +  18 11 11   +47 31 34                          +   688.120   TWILIGHT
  6   3  28 +  23 12 15   +48 38 35                          +   674.291   TWILIGHT
  6   3  29 +  28 27 14   +49 30 44                          +   660.989   TWILIGHT
  6   3  30 +  33 53 29   +50  6 48                          +   648.267   TWILIGHT
  6   3  31 +  39 27 33   +50 25 52                          +   636.178   TWILIGHT
  6   3  32 +  45  5 20   +50 27 18                          +   624.774
  6   3  33 +  50 42 21   +50 10 55                          +   614.107
  6   3  34 +  56 14 18   +49 36 55                          +   604.226
  6   3  35 +  61 37 15   +48 45 54                          +   595.176
  6   3  36 +  66 48  4   +47 38 48                          +   587.004
HDLBRG 101   6   3 34 16.867   E74.5251    2999.371     SE          **
  6   3  37 +  71 44 31   +46 16 47                          +   579.751
  6   3  38 +  76 25 13   +44 41  9                          +   573.457
  6   3  39 +  80 49 38   +42 53 16                          +   568.159
```

6	3	40	+	84	57	53	+40	54	30	+ 563.888
6	3	41	+	88	50	34	+38	46	9	+ 560.674
6	3	42	+	92	28	37	+36	29	26	+ 558.540
6	3	43	+	95	53	10	+34	5	27	+ 557.507
6	3	44	+	99	5	27	+31	35	15	+ 557.588
6	3	45	+	102	6	43	+28	59	44	+ 558.793
6	3	46	+	104	58	12	+26	19	42	+ 561.127
6	3	47	+	107	41	6	+23	35	55	+ 564.587
6	3	48	+	110	16	30	+20	49	1	+ 569.166
6	3	49	+	112	45	29	+17	59	37	+ 574.850
6	3	50	+	115	9	0	+15	8	16	+ 581.619
6	3	51	+	117	28	0	+12	15	25	+ 589.449
6	3	52	+	119	43	19	+ 9	21	34	+ 598.306
6	3	53	+	121	55	46	+ 6	27	8	+ 608.155
6	3	54	+	124	6	6	+ 3	32	30	+ 618.953
6	3	55	+	126	15	5	+ 0	38	2	+ 630.651
6	3	56	+	128	23	23	- 2	15	53	+ 643.197
6	3	57	+	130	31	45	- 5	8	55	+ 656.533
6	3	58	+	132	40	49	- 8	0	43	+ 670.598
6	3	59	+	134	51	20	-10	50	57	+ 685.327
6	4	0	+	137	3	58	-13	39	17	+ 700.652
6	4	1	+	139	19	26	-16	25	21	+ 716.501
6	4	2	+	141	38	29	-19	8	47	+ 732.801
6	4	3	+	144	1	54	-21	49	13	+ 749.478
6	4	4	+	146	30	28	-24	26	16	+ 766.457
6	4	5	+	149	5	3	-26	59	27	+ 783.659
6	4	6	+	151	46	29	-29	28	21	+ 801.009
6	4	7	+	154	35	41	-31	52	25	+ 818.429
6	4	8	+	157	33	34	-34	11	7	+ 835.846
6	4	9	+	160	41	3	-36	23	49	+ 853.184
6	4	10	+	163	59	2	-38	29	52	+ 870.370
6	4	11	+	167	28	17	-40	28	30	+ 887.334
6	4	12	+	171	9	31	-42	18	58	+ 904.006
6	4	13	+	175	3	12	-44	0	23	+ 920.320
6	4	14	+	179	9	32	-45	31	53	+ 936.213
6	4	15	-	176	31	41	-46	52	34	+ 951.623
6	4	16	-	172	1	6	-48	1	34	+ 966.494
6	4	17	-	167	19	56	-48	58	1	+ 980.770
6	4	18	-	162	29	55	-49	41	14	+ 994.401
6	4	19	-	157	33	22	-50	10	39	+ 1007.340
6	4	20	-	152	33	2	-50	25	53	+ 1019.543
6	4	21	-	147	31	54	-50	26	48	+ 1030.968

```
  6   4 22 -142 33  5   -50 13 32                          + 1041.581
  6   4 23 -137 39 29   -49 46 26                          + 1051.347
  6   4 24 -132 53 41   -49  6  3                          + 1060.237
  6   4 25 -128 17 48   -48 13  9                          + 1068.227   TWILIGHT
  6   4 26 -123 53 21   -47  8 35                          + 1075.293   TWILIGHT
  6   4 27 -119 41 19   -45 53 16                          + 1081.419   TWILIGHT
  6   4 28 -115 42 11   -44 28 10                          + 1086.588   TWILIGHT
  6   4 29 -111 55 57   -42 54 14                          + 1090.789   TWILIGHT
  6   4 30 -108 22 22   -41 12 22                          + 1094.016   TWILIGHT
  6   4 31 -105  0 49   -39 23 24                          + 1096.263   TWILIGHT
  6   4 32 -101 50 39   -37 28  6                          + 1097.529   TWILIGHT
  6   4 33 - 98 50 59   -35 27 11                          + 1097.816
  6   4 34 - 96  0 59   -33 21 15                          + 1097.130
  6   4 35 - 93 19 45   -31 10 53                          + 1095.479
  6   4 36 - 90 46 25   -28 56 35                          + 1092.874
  6   4 37 - 88 20  7   -26 38 47                          + 1089.329
  6   4 38 - 86  0  4   -24 17 53                          + 1084.862
  6   4 39 - 83 45 28   -21 54 12                          + 1079.492
  6   4 40 - 81 35 36   -19 28  5                          + 1073.241
  6   4 41 - 79 29 47   -16 59 49                          + 1066.134
  6   4 42 - 77 27 21   -14 29 37                          + 1058.199
LIMAPU 124  6  4 42  8.929  S16.0045   1093.129     NE
  6   4 43 - 75 27 42   -11 57 45                          + 1049.464
LIMAPU 124  6  4 43  4.176  E12.5070   1070.563     NE          **
  6   4 44 - 73 30 12   - 9 24 26                          + 1039.961
  6   4 45 - 71 34 19   - 6 49 52                          + 1029.725
  6   4 46 - 69 39 26   - 4 14 16                          + 1018.790
  6   4 47 - 67 45  3   - 1 37 48                          + 1007.195
   6  4 47 37  LONG.   - 66 33 44  PASS NO.   335 +   999.586
  6   4 48 - 65 50 34   + 0 59 19                          +  994.979
  6   4 49 - 63 55 26   + 3 36 52                          +  982.182
  6   4 50 - 61 59  5   + 6 14 41                          +  968.849
PANTIG 120  6  4 50  6.134  S58.0036   1589.212     NE
  6   4 51 - 60  0 56   + 8 52 31                          +  955.022
  6   4 52 - 58  0 21   +11 30  8                          +  940.748
  6   4 53 - 55 56 40   +14  7 17                          +  926.074
  6   4 54 - 53 49 13   +16 43 41                          +  911.047
PANTIG 120  6  4 54  9.391  E50.1603   1309.567     NE          **
  6   4 55 - 51 37 15   +19 19  2                          +  895.717
  6   4 56 - 49 19 57   +21 52 57                          +  880.134
  6   4 57 - 46 56 26   +24 25  5                          +  864.349
  6   4 58 - 44 25 48   +26 54 57                          +  848.414
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  6   4 59 - 41 46 59   +29 22  2                          +   832.382
  6   5  0 - 38 58 57   +31 45 46                          +   816.307
  6   5  1 - 36  0 30   +34  5 29                          +   800.242
  6   5  2 - 32 50 25   +36 20 23                          +   784.242
  6   5  3 - 29 27 31   +38 29 37                          +   768.363
  6   5  4 - 25 50 34   +40 32 12                          +   752.659
  6   5  5 - 21 58 30   +42 27  1                          +   737.186
  6   5  6 - 17 50 25   +44 12 49                          +   722.000
  6   5  7 - 13 25 47   +45 48 19                          +   707.156
  6   5  8 -  8 44 36   +47 12  5                          +   692.711   TWILIGHT
  6   5  9 -  3 47 30   +48 22 42                          +   678.718   TWILIGHT
  6   5 10 +  1 24  1   +49 18 47                          +   665.235   TWILIGHT
  6   5 11 +  6 47 35   +49 59  5                          +   652.314   TWILIGHT
HDLBRG 101   6  5 11 20.863  N 7.9730     653.117     NE
  6   5 12 + 12 19 56   +50 22 36                          +   640.009   TWILIGHT
  6   5 13 + 17 57  5   +50 28 38                          +   628.373
  6   5 14 + 23 34 39   +50 16 51                          +   617.457
  6   5 15 + 29  8 15   +49 47 23                          +   607.311
  6   5 16 + 34 33 49   +49  0 42                          +   597.982
  6   5 17 + 39 47 59   +47 57 41                          +   589.517
HDLBRG 101   6  5 15 32.320  E72.3142    1713.710     SE         **
  6   5 18 + 44 48 17   +46 39 25                          +   581.958
  6   5 19 + 49 33  7   +45  7 12                          +   575.347
  6   5 20 + 54  1 44   +43 22 22                          +   569.719
  6   5 21 + 58 14  8   +41 26 18                          +   565.111
  6   5 22 + 62 10 46   +39 20 20                          +   561.550
  6   5 23 + 65 52 30   +37  5 40                          +   559.064
  6   5 24 + 69 20 26   +34 43 29                          +   557.673
  6   5 25 + 72 35 47   +32 14 48                          +   557.393
  6   5 26 + 75 39 48   +29 40 35                          +   558.236
  6   5 27 + 78 33 44   +27  1 38                          +   560.207
  6   5 28 + 81 18 45   +24 18 45                          +   563.307
  6   5 29 + 83 56  0   +21 32 35                          +   567.529
  6   5 30 + 86 26 34   +18 43 46                          +   572.862
  6   5 31 + 88 51 27   +15 52 50                          +   579.288
  6   5 32 + 91 11 33   +13  0 19                          +   586.784
  6   5 33 + 93 27 46   +10  6 40                          +   595.319
  6   5 34 + 95 40 54   + 7 12 18                          +   604.858
  6   5 35 + 97 51 45   + 4 17 38                          +   615.360
  6   5 36 +100  1  2   + 1 23  4                          +   626.779
  6   5 37 +102  9 29   - 1 31  4                          +   639.064
  6   5 38 +104 17 48   - 4 24 24                          +   652.158
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  6   5 39 +106 26 40   - 7 16 36                          +   666.001
  6   5 40 +108 36 47   -10  7 19                          +   680.529
  6   5 41 +110 48 50   -12 56 13                          +   695.674
  6   5 42 +113  3 32   -15 42 56                          +   711.366
  6   5 43 +115 21 39   -18 27  8                          +   727.533
  6   5 44 +117 43 55   -21  8 26                          +   744.101
  6   5 45 +120 11  9   -23 46 26                          +   760.993
  6   5 46 +122 44  9   -26 20 42                          +   778.134
  6   5 47 +125 23 48   -28 50 47                          +   795.446
OOMERA 119  6  5 47 55.664  W51.5455    1204.888     SE         **
  6   5 48 +128 11  0   -31 16 11                          +   812.853
  6   5 49 +131  6 38   -33 36 21                          +   830.280
  6   5 50 +134 11 40   -35 50 41                          +   847.651
OOMERA 119  6  5 50 47.731  S44.7535    1148.733     SE
  6   5 51 +137 26 57   -37 58 31                          +   864.893
  6   5 52 +140 53 20   -39 59  9                          +   881.934
  6   5 53 +144 31 33   -41 51 48                          +   898.705
  6   5 54 +148 22  8   -43 35 37                          +   915.138
  6   5 55 +152 25 21   -45  9 45                          +   931.170
  6   5 56 +156 41  6   -46 33 16                          +   946.739
  6   5 57 +161  8 52   -47 45 19                          +   961.785
  6   5 58 +165 47 36   -48 45  1                          +   976.254
  6   5 59 +170 35 39   -49 31 39                          +   990.094
  6   6  0 +175 30 53   -50  4 35                          +  1003.256
  6   6  1 -179 29 22   -50 23 24                          +  1015.695
  6   6  2 -174 28  5   -50 27 55                          +  1027.370
  6   6  3 -169 28 20   -50 18 11                          +  1038.243
  6   6  4 -164 33  6   -49 54 30                          +  1048.280
  6   6  5 -159 45  5   -49 17 22                          +  1057.452
  6   6  6 -155  6 30   -48 27 31                          +  1065.729  TWILIGHT
  6   6  7 -150 39  2   -47 25 46                          +  1073.091  TWILIGHT
  6   6  8 -146 23 48   -46 13  3                          +  1079.517  TWILIGHT
  6   6  9 -142 21 23   -44 50 18                          +  1084.992  TWILIGHT
  6   6 10 -138 31 56   -43 18 29                          +  1089.504  TWILIGHT
  6   6 11 -134 55 12   -41 38 30                          +  1093.042  TWILIGHT
  6   6 12 -131 30 43   -39 51 13                          +  1095.603  TWILIGHT
  6   6 13 -128 17 46   -37 57 25                          +  1097.183  TWILIGHT
  6   6 14 -125 15 33   -35 57 50                          +  1097.785
  6   6 15 -122 23 14   -33 53  6                          +  1097.412
  6   6 16 -119 39 54   -31 43 48                          +  1096.071
  6   6 17 -117  4 41   -29 30 27                          +  1093.772
  6   6 18 -114 36 42   -27 13 29                          +  1090.530
```

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   6   6 19 -112 15 10   -24 53 20                              +  1086.361
   6   6 20 -109 59 18   -22 30 20                              +  1081.282
   6   6 21 -107 48 20   -20  4 49                              +  1075.316
   6   6 22 -105 41 35   -17 37  4                              +  1068.485
   6   6 23 -103 38 23   -15  7 21                              +  1060.818
   6   6 24 -101 38  7   -12 35 55                              +  1052.341
   6   6 25  - 99 40 10   -10  2 58                             +  1043.087
   6   6 26  - 97 43 57    - 7 28 43                            +  1033.089
   6   6 27  - 95 48 54    - 4 53 23                            +  1022.381
   6   6 28  - 93 54 28    - 2 17  9                            +  1011.000
    6   6 28 52  LONG.   - 92 14 28   PASS NO.   336 +  1000.497
   6   6 29  - 92  0  5   + 0 19 47                              +   998.985
   6   6 30  - 90  5 12   + 2 57 12                              +   986.376
   6   6 31  - 88  9 15   + 5 34 56                              +   973.217
2RSTON   99  6   6 31 45.503   S87.2347    3333.221     NE
   6   6 32  - 86 11 38   + 8 12 44                              +   959.549
   6   6 33  - 84 11 46   +10 50 23                              +   945.419
   6   6 34  - 82  8 58   +13 27 38                              +   930.874
CPCAN1 107  6   6 34 44.243   S65.4394    1775.805     NE
   6   6 35  - 80  2 36   +16  4 13                              +   915.959
PNSTAT   96  6   6 35 59.802   S82.3911    2759.016     NE
   6   6 36  - 77 51 53   +18 39 48                              +   900.726
BELVOR 113  6   6 36 19.577   S78.3235    2434.038     NE
ABDEEN 112  6   6 36 47.530   S77.8202    2384.717     NE
   6   6 37  - 75 36  3   +21 14  5                              +   885.222
PORSPG 117  6   6 37  2.012   S68.9213    1867.711     NE
FTMONM 104  6   6 37 40.121   S75.7490    2221.223     NE
   6   6 38  - 73 14 15   +23 46 39                              +   869.499
LINCON 105  6   6 38 42.393   S75.6790    2185.558     NE
   6   6 39  - 70 45 34   +26 17  6                              +   853.609
CPCAN1 107  6   6 39 46.992   E61.1881    1496.285     NE          **
   6   6 40  - 68  8 59   +28 44 54                              +   837.605
   6   6 41  - 65 23 28   +31  9 30                              +   821.538
   6   6 42  - 62 27 50   +33 30 15                              +   805.464
PORSPG 117  6   6 42 45.753   E68.3314    1681.860     NE          **
ARKANS 109  6   6 42 39.512   E87.4186    3008.785     NE          **
2RSTON   99  6   6 42 30.592   E83.0812    2608.539     NE          **
   6   6 43  - 59 20 55   +35 46 26                              +   789.437
   6   6 44  - 56  1 29   +37 57 10                              +   773.512
BELVOR 113  6   6 44 21.123   E73.3422    2182.846     NE          **
ABDEEN 112  6   6 44 43.081   E78.5089    2182.180     NE          **
   6   6 45  - 52 28 18   +40  1 30                              +   757.743
```

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FTMONM 104  6  6 45  6.777  E77.5535    2105.295     NE        **
PNSTAT  96  6  6 45 23.194  E82.8308    2488.962     NE        **
                                                     +   742.187
  6  6 46 - 48 40 16  +41 58 23
LINCON 105  6  6 46 20.564  E79.6110    2207.359     NE        **
                                                     +   726.899
  6  6 47 - 44 36 26  +43 46 36                       +   711.935
  6  6 48 - 40 16 10  +45 24 50                       +   697.350  TWILIGHT
  6  6 49 - 35 39 17  +46 51 44
HOLBRG 101  6  6 51 22.056  W85.5015    2528.727     NE        **
                                                     +   683.201  TWILIGHT
  6  6 50 - 30 46 15  +48  5 51                       +   669.542  TWILIGHT
  6  6 51 - 25 38 20  +49  5 47                       +   656.428  TWILIGHT
  6  6 52 - 20 17 41  +49 50 16                       +   643.913  TWILIGHT
  6  6 53 - 14 47 19  +50 18 11                       +   632.050  TWILIGHT
  6  6 54 -  9 11  5  +50 28 46                       +   620.890
  6  6 55 -  3 33 16  +50 21 36                       +   610.485
  6  6 56 +  2  1 43  +49 56 41                       +   600.882
  6  6 57 +  7 29 39  +49 14 24
HOLBRG 101  6  6 57 13.563  S 4.3470     599.829     SE
                                                     +   592.127
  6  6 58 + 12 47  0  +48 15 31
HOLBRG 101  6  6 56 48.041  W 4.5135     537.096     SE        **
  6  6 59 + 17 51  2  +47  1  6                       +   584.267
  6  7  0 + 22 39 57  +45 32 23                       +   577.341
  6  7  1 + 27 12 47  +43 50 42                       +   571.388
  6  7  2 + 31 29 19  +41 57 26                       +   566.444
  6  7  3 + 35 29 58  +39 53 55                       +   562.540
  6  7  4 + 39 15 27  +37 41 24                       +   559.702
  6  7  5 + 42 46 52  +35 21  4                       +   557.955
  6  7  6 + 46  5 22  +32 53 59                       +   557.315
  6  7  7 + 49 12 13  +30 21  6                       +   557.795
  6  7  8 + 52  8 39  +27 43 18                       +   559.403
  6  7  9 + 54 55 52  +25  1 22                       +   562.142
  6  7 10 + 57 35  3  +22 15 59                       +   566.006
  6  7 11 + 60  7 17  +19 27 46                       +   570.986
  6  7 12 + 62 33 33  +16 37 19                       +   577.065
  6  7 13 + 64 54 50  +13 45  9                       +   584.224
  6  7 14 + 67 12  0  +10 51 43                       +   592.432
  6  7 15 + 69 25 53  +  7 57 28                      +   601.657
  6  7 16 + 71 37 17  +  5  2 49                      +   611.860
  6  7 17 + 73 46 56  +  2  8  8                      +   622.995
  6  7 18 + 75 55 34  -  0 46 11                      +   635.013
  6  7 19 + 78  3 52  -  3 39 48                      +   647.858
  6  7 20 + 80 12 34  -  6 32 22                      +   661.471
  6  7 21 + 82 22 19  -  9 23 32   62                 +   675.791
```

6	7	22	+	84	33	51	-12	12	59	+	690.750	
6	7	23	+	86	47	51	-15	0	21	+	706.279	
6	7	24	+	89	5	4	-17	45	16	+	722.305	
6	7	25	+	91	26	14	-20	27	24	+	738.756	
6	7	26	+	93	52	10	-23	6	19	+	755.555	
6	7	27	+	96	23	40	-25	41	38	+	772.626	
6	7	28	+	99	1	35	-28	12	53	+	789.893	
6	7	29	+101	46	49		-30	39	34	+	807.280	
6	7	30	+104	40	17		-33	1	10	+	824.708	
6	7	31	+107	42	54		-35	17	6	+	842.105	
6	7	32	+110	55	33		-37	26	42	+	859.396	
6	7	33	+114	19	7		-39	29	16	+	876.507	
6	7	34	+117	54	22		-41	24	3	+	893.370	
6	7	35	+121	41	50		-43	10	13	+	909.917	
6	7	36	+125	41	55		-44	46	55	+	926.082	
6	7	37	+129	54	37		-46	13	14	+	941.803	
6	7	38	+134	19	30		-47	28	16	+	957.020	
6	7	39	+138	55	41		-48	31	11	+	971.676	
6	7	40	+143	41	39		-49	21	11	+	985.719	
6	7	41	+148	35	23		-49	57	37	+	999.100	
6	7	42	+153	34	21		-50	20	1	+	1011.771	
6	7	43	+158	35	36		-50	28	8	+	1023.692	
6	7	44	+163	36	6		-50	21	57	+	1034.822	
6	7	45	+168	32	48		-50	1	43	+	1045.127	
6	7	46	+173	22	54		-49	27	54	+	1054.575	
6	7	47	+178	4	5		-48	41	9	+	1063.139	TWILIGHT
6	7	48	-177	25	30		-47	42	17	+	1070.794	TWILIGHT
6	7	49	-173	7	6		-46	32	12	+	1077.520	TWILIGHT
6	7	50	-169	1	25		-45	11	51	+	1083.299	TWILIGHT
6	7	51	-165	8	43		-43	42	12	+	1088.118	TWILIGHT
6	7	52	-161	28	50		-42	4	10	+	1091.969	TWILIGHT
6	7	53	-158	1	19		-40	18	38	+	1094.843	TWILIGHT
6	7	54	-154	45	33		-38	26	23	+	1096.738	TWILIGHT
6	7	55	-151	40	44		-36	28	11	+	1097.653	
6	7	56	-148	46	2		-34	24	41	+	1097.592	
6	7	57	-146	0	33		-32	16	28	+	1096.562	
6	7	58	-143	23	22		-30	4	5	+	1094.572	
6	7	59	-140	53	41		-27	47	59	+	1091.634	
6	8	0	-138	30	38		-25	28	36	+	1087.763	
6	8	1	-136	13	26		-23	6	17	+	1082.978	
6	8	2	-134	1	19		-20	41	23	+	1077.298	
6	8	3	-131	53	36		-18	14	11	+	1070.747	

```
  6   8   4 -129 49 35   -15 44 58                                  + 1063.350
  6   8   5 -127 48 40   -13 13 57                                  + 1055.136
  6   8   6 -125 50 13   -10 41 23                                  + 1046.134
  6   8   7 -123 53 38   - 8  7 29                                  + 1036.376
  6   8   8 -121 58 22   - 5 32 26                                  + 1025.898
  6   8   9 -120  3 52   - 2 56 26                                  + 1014.735
  6   8  10 -118  9 33   - 0 19 42                                  + 1002.925
   6   8  10   7  LONG.   -117 55  9  PASS NO.   337 + 1001.367
  6   8  11 -116 14 53   + 2 17 35                                  +  990.509
  6   8  12 -114 19 17   + 4 55 13                                  +  977.528
  6   8  13 -112 22 11   + 7 32 58                                  +  964.025
  6   8  14 -110 22 59   +10 10 39                                  +  950.044
  6   8  15 -108 21  1   +12 47 59                                  +  935.632
WHITES 111   6   8 15 46.286   S77.2546    2414.064     NE
  6   8  16 -106 15 40   +15 24 42                                  +  920.836
BOLDER  95   6   8 16 28.494   S83.8804    2911.817     NE
  6   8  17 -104  6  9   +18  0 32                                  +  905.704
  6   8  18 -101 51 44   +20 35  8                                  +  890.285
  6   8  19 - 99 31 36   +23  8  8                                  +  874.630
FTSILL 110   6   8 19 27.668   S60.0071    1499.485     NE
  6   8  20 - 97  4 48   +25 39  6                                  +  858.791
  6   8  21 - 94 30 23   +28  7 35                                  +  842.819
CPCAN1 107   6   8 21  2.239   W65.9274    1667.219     NE          **
  6   8  22 - 91 47 18   +30 33  1                                  +  826.768
ARKANS 109   6   8 22 21.547   S29.3217     925.198     NE
UWISCN 102   6   8 22 44.227   S62.8905    1509.105     NE
  6   8  23 - 88 54 25   +32 54 46                                  +  810.691
2RSTON  99   6   8 23 44.068   S 0.7899     798.957     NE
UILNOS  97   6   8 23 13.478   S47.7280    1127.097     NE
WHITES 111   6   8 23 20.379   E74.5023    2014.389     NE          **
FTSILL 110   6   8 23 45.304   E60.1004    1396.022     NE          **
ARKANS 109   6   8 23 54.780   E31.4332     914.364     NE          **
2RSTON  99   6   8 23 45.860   E 0.6444     798.454     NE          **
  6   8  24 - 85 50 33   +35 12  8                                  +  794.643
PORSPG 117   6   8 24  1.124   W55.5538    1268.814     NE          **
LANGLY 106   6   8 24 51.428   W41.5036    1001.636     NE          **
GOLDST 103   6   8 24  4.832   E88.1500    3078.745     NE          **
  6   8  25 - 82 34 29   +37 24 19                                  +  778.678
CPCAN1 107   6   8 25 34.336   N63.0386    1440.195     NE
BPOINT 126   6   8 25 28.754   W26.2828     848.944     NE          **
BELVOR 113   6   8 25 36.479   W23.2048     828.611     NE          **
ABDEEN 112   6   8 25 58.932   W21.3673     812.861     NE          **
```

```
  6  8 26 - 79  5  1  +39 30 21                          +  762.851
BPOINT 126  6  8 26 32.406  N19.5808    795.368    NE
PORSPG 117  6  8 26 57.208  N47.0307   1037.638    NE
BELVOR 113  6  8 26 31.747  N17.0506    785.336    NE
ABDEEN 112  6  8 26 48.515  N15.1349    774.166    NE
LANGLY 106  6  8 26 43.468  N32.8994    876.056    NE
PNSTAT  96  6  8 26 19.820  S 5.9991    761.011    NE
FTMONM 104  6  8 26 22.168  W25.2341    827.275    NE        **
UILNOS  97  6  8 26 17.616  E54.5242   1191.953    NE        **
PNSTAT  96  6  8 26 38.586  E 8.2644    759.449    NE        **
BOLDER  95  6  8 26 18.295  E83.4258   2550.589    NE        **
  6  8 27 - 75 20 57  +41 29 13                          +  747.217
LINCON 105  6  8 27 57.770  N 6.1387    736.171    NE
FTMONM 104  6  8 27 20.155  N17.2541    773.096    NE
LINCON 105  6  8 27 35.955  W10.5015    749.192    NE        **
UWISCN 102  6  8 27 51.343  E70.8546   1686.603    NE        **
  6  8 28 - 71 21 19  +43 19 44                          +  731.834
  6  8 29 - 67  5 23  +45  0 38                          +  716.755
  6  8 30 - 62 32 50  +46 30 33                          +  702.038  TWILIGHT
  6  8 31 - 57 43 58  +47 48  4                          +  687.738  TWILIGHT
  6  8 32 - 52 39 48  +48 51 46                          +  673.910  TWILIGHT
  6  8 33 - 47 22 15  +49 40 20                          +  660.608  TWILIGHT
  6  8 34 - 41 54  8  +50 12 37                          +  647.888  TWILIGHT
  6  8 35 - 36 19  5  +50 27 44                          +  635.803  TWILIGHT
  6  8 36 - 30 41 19  +50 25 10                          +  624.405
  6  8 37 - 25  5 16  +50  4 49                          +  613.745
  6  8 38 - 19 35 12  +49 26 58                          +  603.872
  6  8 39 - 14 14 52  +48 32 19                          +  594.834
  6  8 40 -  9  7 12  +47 21 49                          +  586.675
HDLBRG 101  6  8 38  3.638  W86.8212   4078.984    SE        **
  6  8 41 -  4 14 18  +45 56 41                          +  579.439
  6  8 42 +  0 22 44  +44 18 15                          +  573.164
  6  8 43 +  4 43 28  +42 27 52                          +  567.887
HDLBRG 101  6  8 43 58.545  S65.9534   1176.511    SE
  6  8 44 +  8 48  9  +40 26 54                          +  563.642
  6  8 45 + 12 37 29  +38 16 36                          +  560.455
  6  8 46 + 16 12 26  +35 58 12                          +  558.352
  6  8 47 + 19 34 10  +33 32 46                          +  557.353
  6  8 48 + 22 43 55  +31  1 18                          +  557.471
  6  8 49 + 25 42 57  +28 24 42                          +  558.716
  6  8 50 + 28 32 27  +25 43 45                          +  561.092
  6  8 51 + 31 13 38  +22 59 11                          +  564.597
```

6	8	52	+	33	47	35	+20	11	38	+	569.222
6	8	53	+	36	15	19	+17	21	42	+	574.953
6	8	54	+	38	37	50	+14	29	54	+	581.771
6	8	55	+	40	56	0	+11	36	43	+	589.649
6	8	56	+	43	10	41	+ 8	42	37	+	598.556
6	8	57	+	45	22	41	+ 5	48	0	+	608.453
6	8	58	+	47	32	44	+ 2	53	15	+	619.299
6	8	59	+	49	41	35	- 0	1	13	+	631.043
6	9	0	+	51	49	57	- 2	55	6	+	643.634
6	9	1	+	53	58	31	- 5	48	0	+	657.013
6	9	2	+	56	7	58	- 8	39	37	+	671.118
6	9	3	+	58	19	1	-11	29	35	+	685.883
6	9	4	+	60	32	21	-14	17	34	+	701.241
6	9	5	+	62	48	43	-17	3	12	+	717.119
6	9	6	+	65	8	51	-19	46	8	+	733.445
6	9	7	+	67	33	32	-22	25	58	+	750.143
6	9	8	+	70	3	33	-25	2	17	+	767.138
6	9	9	+	72	39	49	-27	34	40	+	784.352
6	9	10	+	75	23	9	-30	2	37	+	801.710
6	9	11	+	78	14	29	-32	25	37	+	819.134
6	9	12	+	81	14	45	-34	43	5	+	836.549
6	9	13	+	84	24	50	-36	54	24	+	853.881
6	9	14	+	87	45	38	-38	58	52	+	871.057
6	9	15	+	91	17	54	-40	55	44	+	888.005
6	9	16	+	95	2	19	-42	44	12	+	904.659
6	9	17	+	98	59	15	-44	23	24	+	920.951
6	9	18	+103		8	52	-45	52	27	+	936.817
6	9	19	+107		30	49	-47	10	27	+	952.198
6	9	20	+112		4	21	-48	16	31	+	967.037
6	9	21	+116		48	7	-49	9	51	+	981.279
6	9	22	+121		40	11	-49	49	45	+	994.873
6	9	23	+126		38	10	-50	15	43	+	1007.773
6	9	24	+131		39	13	-50	27	27	+	1019.935
6	9	25	+136		40	16	-50	24	50	+	1031.318
6	9	26	+141		38	14	-50	8	5	+	1041.888
6	9	27	+146		30	18	-49	37	36	+	1051.610
6	9	28	+151		13	58	-48	54	1	+	1060.457
6	9	29	+155		47	16	-47	58	5	+	1068.402 TWILIGHT
6	9	30	+160		8	48	-46	50	43	+	1075.426 TWILIGHT
6	9	31	+164		17	44	-45	32	30	+	1081.508 TWILIGHT
6	9	32	+168		13	42	-44	5	25	+	1086.635 TWILIGHT
6	9	33	+171		56	47	-42	29	23	+	1090.795 TWILIGHT

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  6   9 34 +175 27 20   -40 45 38                          + 1093.982  TWILIGHT
  6   9 35 +178 45 58   -38 54 59                          + 1096.190  TWILIGHT
  6   9 36 -178  6 34   -36 58 12                          + 1097.420  TWILIGHT
  6   9 37 -175  9 24   -34 55 57                          + 1097.673
  6   9 38 -172 21 41   -32 48 52                          + 1096.955
  6   9 39 -169 42 32   -30 37 28                          + 1095.273
  6   9 40 -167 11  4   -28 22 16                          + 1092.640
  6   9 41 -164 46 27   -26  3 40                          + 1089.070
  6   9 42 -162 27 52   -23 42  4                          + 1084.579
  6   9 43 -160 14 34   -21 17 48                          + 1079.188
  6   9 44 -158  5 50   -18 51 10                          + 1072.919
  6   9 45 -156  0 58   -16 22 27                          + 1065.795
  6   9 46 -153 59 21   -13 51 53                          + 1057.845
  6   9 47 -152  0 22   -11 19 43                          + 1049.098
  6   9 48 -150  3 23   - 8 46  9                          + 1039.586
  6   9 49 -148  7 53   - 6 11 24                          + 1029.341
  6   9 50 -146 13 15   - 3 35 39                          + 1018.400
  6   9 51 -144 18 58   - 0 59  7                          + 1006.800
   6   9 51 22  LONG.   -143 35 50  PASS NO.  338 + 1002.197
  6   9 52 -142 24 29   + 1 38  0                          +  994.580
  6   9 53 -140 29 12   + 4 15 32                          +  981.782
  6   9 54 -138 32 34   + 6 53 14                          +  968.448
  6   9 55 -136 33 59   + 9 30 55                          +  954.621
  6   9 56 -134 32 50   +12  8 18                          +  940.348
  6   9 57 -132 28 25   +14 45 10                          +  925.675
  6   9 58 -130 20  5   +17 21 12                          +  910.650
  6   9 59 -128  7  2   +19 56  6                          +  895.322
  6  10  0 -125 48 28   +22 29 30                          +  879.741
  6  10  1 -123 23 30   +25  0 59                          +  863.958
STNFDU  98  6 10  1 29.449  S62.8208   1573.670    NE
  6  10  2 -120 51 10   +27 30  6                          +  848.025
  6  10  3 -118 10 27   +29 56 19                          +  831.995
NELCAL 121  6 10  3 25.691  S13.9250    847.104    NE
GOLDST 103  6 10  3 28.287  S34.0467    968.944    NE
  6  10  4 -115 20 14   +32 19  1                          +  815.921
NELCAL 121  6 10  4  6.519  E14.3128    837.175    NE         **
WHITES 111  6 10  4 35.646  W42.7169   1049.439    NE         **
  6  10  5 -112 19 21   +34 2  33                          +  799.857
FTSILL 110  6 10  5  0.592  E65.1811   1566.611    NE         **
ARKANS 109  6 10  5 10.130  W77.3599   2175.954    NE         **
GOLDST 103  6 10  5 20.141  E36.4680    958.474    NE         **
2RSTON  99  6 10  5  1.190  W82.8576   2594.315    NE         **
```

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  6 10  6 -109  6 35  +36 51  5                          +  783.858
WHITES 111  6 10  6 41.715  N37.4761    944.543    NE
BELVOR 113  6 10  6 51.788  W85.3727   2755.228    NE          **
STNFDU  98  6 10  6 15.759  E64.7875   1518.074    NE          **
  6 10  7 -105 40 43  +38 58 45                           +  767.979
BOLDER  95  6 10  7  7.175  S 8.4874    771.927    NE
ABDEEN 112  6 10  7 14.262  W84.9317   2701.418    NE          **
FTMONM 104  6 10  7 37.518  W85.3136   2723.437    NE          **
UILNOS  97  6 10  7 32.925  W67.4562   1584.788    NE          **
PNSTAT  96  6 10  7 53.915  W80.3810   2299.121    NE          **
BOLDER  95  6 10  7 33.646  E11.3380    770.878    NE          **
  6 10  8 -102  0 34  +40 59 31                          +  752.275
FTSILL 110  6 10  8 55.075  N56.1039   1197.898    NE
LINCON 105  6 10  8 51.285  W82.6597   2447.933    NE          **
  6 10  9 -  98  5  5  +42 52 15                         +  736.802
UWISCN 102  6 10  9  6.755  W45.9144   1003.457    NE          **
  6 10 10 -  93 53 27  +44 35 43                         +  721.615
ARKANS 109  6 10 10 42.192  N65.8006   1436.233    NE
UWISCN 102  6 10 10 56.529  N27.6778    787.922    NE
  6 10 11 -  89 25 15  +46  8 34                         +  706.771
ZRSTON  99  6 10 11 35.070  N70.2987   1593.145    NE
UILNOS  97  6 10 11 15.254  N50.0266   1025.729    NE
  6 10 12 -  84 40 35  +47 29 23                         +  692.326  TWILIGHT
CPCAN1 107  6 10 12 48.939  N84.1628   2441.820    NE
  6 10 13 -  79 40 18  +48 36 46                         +  678.334  TWILIGHT
FORSPG 117  6 10 13 47.565  N75.0326   1768.622    NE
BELVOR 113  6 10 13 29.273  N66.2375   1382.330    NE
ABDEEN 112  6 10 13 41.344  N64.5512   1320.080    NE
PNSTAT  96  6 10 13 20.786  N58.8231   1163.761    NE
  6 10 14 -  74 26  3  +49 29 20                         +  664.852  TWILIGHT
LINCON 105  6 10 14 32.554  N55.7369   1069.219    NE
FTMONM 104  6 10 14  4.374  N63.2000   1268.763    NE
  6 10 15 -  69  0 25  +50  5 54                         +  651.933  TWILIGHT
  6 10 16 -  63 26 52  +50 25 30                         +  639.631  TWILIGHT
  6 10 17 -  57 49 27  +50 27 32                         +  628.000
  6 10 18 -  52 12 35  +50 11 46                         +  617.091
  6 10 19 -  46 40 39  +49 38 25                         +  606.953
  6 10 20 -  41 17 33  +48 40  2                         +  597.634
  6 10 21 -  36  6 25  +47 41 32                         +  589.182
  6 10 22 -  31  9 34  +46 20  6                         +  581.639
  6 10 23 -  26 28 24  +44 44 59                         +  575.045
  6 10 24 -  22  3 28  +42 57 35                         +  569.440
```

6	10	25	-	17	54	41	+40	59	14			+	564.855
6	10	26	-	14	1	27	+38	51	15			+	561.322
6	10	27	-	10	22	53	+36	34	51			+	558.865
6	10	28	-	6	57	51	+34	11	9			+	557.508
6	10	29	-	3	45	6	+31	41	9			+	557.264
6	10	30	-	0	43	24	+29	5	48			+	558.146
6	10	31	+	2	8	28	+26	25	54			+	560.159
6	10	32	+	4	51	43	+23	42	12			+	563.303
6	10	33	+	7	27	27	+20	55	21			+	567.570
6	10	34	+	9	56	43	+18	5	58			+	572.951
6	10	35	+	12	20	32	+15	14	34			+	579.425
6	10	36	+	14	39	46	+12	21	41			+	586.970
6	10	37	+	16	55	17	+ 9	27	45			+	595.554
6	10	38	+	19	7	55	+ 6	33	11			+	605.142
6	10	39	+	21	18	26	+ 3	38	25			+	615.693
6	10	40	+	23	27	34	+ 0	43	47			+	627.159
SANANA	116			6	10	40	14.952			E89.5074	2850.160	SE	**
6	10	41	+	25	36	2	- 2	10	19			+	639.489
6	10	42	+	27	44	31	- 5	3	33			+	652.626
6	10	43	+	29	53	42	- 7	55	34			+	666.509
6	10	44	+	32	4	19	-10	46	2			+	681.075
6	10	45	+	34	17	2	-13	34	36			+	696.255
6	10	46	+	36	32	35	-16	20	55			+	711.977
6	10	47	+	38	51	43	-19	4	38			+	728.171
6	10	48	+	41	15	12	-21	45	21			+	744.761
6	10	49	+	43	43	51	-24	22	39			+	761.671
6	10	50	+	46	18	29	-26	56	8			+	778.826
6	10	51	+	48	59	59	-29	25	19			+	796.147
6	10	52	+	51	49	15	-31	49	40			+	813.558
6	10	53	+	54	47	12	-34	8	39			+	830.985
6	10	54	+	57	54	46	-36	21	38			+	848.351
6	10	55	+	61	12	50	-38	27	57			+	865.583
6	10	56	+	64	42	12	-40	26	51			+	882.311
6	10	57	+	68	23	33	-42	17	34			+	899.365
6	10	58	+	72	17	22	-43	59	14			+	915.777
6	10	59	+	76	23	52	-45	30	57			+	931.784
6	11	0	+	80	42	51	-46	51	51			+	947.324
6	11	1	+	85	13	38	-48	[illegible]	2			+	962.339
6	11	2	+	89	55	3	-46	57	39			+	976.774
6	11	3	+	94	45	19	-49	41	1			+	990.577
6	11	4	+	99	42	9	-50	10	32			+	1003.701
6	11	5	+104	42	47		-50	25	51			+	1016.100

```
  6 11  6 +109 44 11  +50 26 50                          + 1027.733
  6 11  7 +114 43 17  +50 13 36                          + 1038.563
  6 11  8 +119 37  9  +49 46 30                          + 1048.557
  6 11  9 +124 23 10  +49  6  7                          + 1057.684
  6 11 10 +128 59 15  +48 13 11                          + 1065.918  TWILIGHT
  6 11 11 +133 23 53  +47  8 35                          + 1073.236  TWILIGHT
  6 11 12 +137 36  3  +45 53 14                          + 1079.619  TWILIGHT
  6 11 13 +141 35 17  +44 28  6                          + 1085.052  TWILIGHT
  6 11 14 +145 21 35  +42 54  7                          + 1089.522  TWILIGHT
  6 11 15 +148 55 14  +41 12 12                          + 1093.021  TWILIGHT
  6 11 16 +152 16 48  +39 23 12                          + 1095.543  TWILIGHT
  6 11 17 +155 26 59  +37 27 52                          + 1097.086  TWILIGHT
  6 11 18 +158 26 39  +35 26 55                          + 1097.653
  6 11 19 +161 16 38  +33 20 59                          + 1097.247
  6 11 20 +163 57 50  +31 10 38                          + 1095.875
  6 11 21 +166 31  8  +28 56 20                          + 1093.548
  6 11 22 +168 57 22  +26 38 33                          + 1090.279
  6 11 23 +171 17 23  +24 17 41                          + 1086.086
  6 11 24 +173 31 55  +21 54  4                          + 1080.985
  6 11 25 +175 41 43  +19 28  0                          + 1074.999
  6 11 26 +177 47 27  +16 59 48                          + 1068.152
  6 11 27 +179 49 48  +14 29 42                          + 1060.469
SAMOAI 114  6 11 27  3.738  W50.3833   1517.396    NE          **
  6 11 28 -178 10 37  +11 57 56                          + 1051.981
  6 11 29 -176 13 13  + 9 24 43                          + 1042.716
  6 11 30 -174 17 25  + 6 50 17                          + 1032.708
  6 11 31 -172 22 39  + 4 14 48                          + 1021.993
  6 11 32 -170 28 22  + 1 38 29                          + 1010.607
   6 11 32 37  LONG.  -169 16 34  PASS NO.  339 + 1003.061
  6 11 33 -168 34  0  + 0 58 29                          +  998.588
  6 11 34 -166 39  1  + 3 35 53                          +  985.977
  6 11 35 -164 42 49  + 6 13 31                          +  972.816
  6 11 36 -162 44 49  + 8 51 11                          +  959.148
  6 11 37 -160 44 24  +11 28 38                          +  945.019
BSANDS 100  6 11 37 27.754  S54.5586   1451.457    NE
  6 11 38 -158 40 56  +14  5 37                          +  930.474
  6 11 39 -156 33 41  +16 41 50                          +  915.562
  6 11 40 -154 21 57  +19 1  0                           +  900.330
  6 11 41 -152  4 55  +21 5  46                          +  884.828
BSANDS 100  6 11 41  4.212  S48.2024   1237.652    NE          **
  6 11 42 -149 41 42  +24 22 44                          +  869.107
  6 11 43 -147 11 23  +26 52 27                          +  853.219
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  6 11 44 -144 32 57  +29 19 25                          +  837.216
  6 11 45 -141 45 19  +31 43  2                          +  921.151
WHITES 111  6 11 45 50.894  W89.5219   3258.338    NE        **
  6 11 46 -138 47 20  +34  2 39                          +  805.078
GOLDST 103  6 11 46 35.471  W76.0081   2084.139    NE        **
  6 11 47 -135 37 47  +36 17 30                          +  789.052
STNFDU  98  6 11 47 31.089  W59.4470   1349.155    NE        **
  6 11 48 -132 15 26  +38 26 43                          +  773.127
BOLDER  95  6 11 48 49.016  W80.0642   2286.279    NE        **
  6 11 49 -128 39  7  +40 29 19                          +  757.358
  6 11 50 -124 47 44  +42 24 11                          +  741.801
STNFDU  98  6 11 50 38.708  N47.5631   1024.527    NE
UWISCN 102  6 11 50 22.146  W88.0680   2945.109    NE        **
  6 11 51 -120 40 22  +44 10  8                          +  726.513
GOLDST 103  6 11 51 52.186  N64.2791   1385.737    NE
  6 11 52 -116 16 32  +45 45 48                          +  711.549
  6 11 53 -111 36  8  +47  9 50                          +  696.964  TWILIGHT
WHITES 111  6 11 53 58.913  N75.6301   1834.298    NE
  6 11 54 -106 39 49  +48 20 47                          +  682.815  TWILIGHT
BOLDER  95  6 11 54 16.587  N60.0139   1200.689    NE
  6 11 55 -101 29  2  +49 17 16                          +  669.157  TWILIGHT
FTSILL 110  6 11 55 34.371  N77.0021   1871.027    NE
  6 11 56 - 96  6  7  +49 58  3                          +  656.045  TWILIGHT
ARKANS 109  6 11 56 57.736  N77.9772   1894.268    NE
  6 11 57 - 90 34 19  +50 22  6                          +  643.533  TWILIGHT
UWISCN 102  6 11 57  9.478  N56.7840   1066.486    NE
2RSTON  99  6 11 57 41.634  N78.9677   1939.806    NE
UILNOS  97  6 11 57 25.010  N67.3300   1361.359    NE
  6 11 58 - 84 57 34  +50 28 43                          +  631.674  TWILIGHT
CPCAN1 107  6 11 58 46.336  N87.6326   2631.916    SE
  6 11 59 - 79 20 13  +50 17 33                          +  620.520
PORSPG 117  6 11 59 40.924  N77.7891   1815.237    SE
BELVOR 113  6 11 59 23.539  N70.9308   1463.113    SE
ABDEEN 112  6 11 59 34.971  N68.7993   1371.962    SE
FTMONM 104  6 11 59 57.177  N66.1147   1268.268    SE
PNSTAT  96  6 11 59 15.608  N65.2866   1253.239    SE
  6 12  0 - 73 46 41  +49 43 42                          +  610.121
LINCON 105  6 12  0 24.884  N56.4468   1005.129    SE
  6 12  1 - 68 20 59  +49  . 40                          +  600.528
  6 12  2 - 63  6 33  +48  3 15                          +  591.786
  6 12  3 - 58  5 53  +48 42 34                          +  583.940
  6 12  4 - 53 20 36  +48 10 53                          +  577.032
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  6 12  5 - 48 51 28   +43 26 33                          +   571.100
LINCON 105  6 12  5 26.273  E83.9122    2159.758     SE          **
  6 12  6 - 44 39 32   +41 30 56                          +   566.179
  6 12  7 - 40 41 23   +39 25 20                          +   562.301
  6 12  8 - 36 59  7   +37 11  0                          +   559.494
  6 12  9 - 33 30 41   +34 49  6                          +   557.778
  6 12 10 - 30 14 52   +32 20 39                          +   557.174
  6 12 11 - 27 10 25   +29 46 36                          +   557.693
  6 12 12 - 24 16  6   +27  7 48                          +   559.342
  6 12 13 - 21 30 43   +24 25  0                          +   562.124
  6 12 14 - 18 53  7   +21 38 54                          +   566.033
  6 12 15 - 16 22 15   +18 50  6                          +   571.060
  6 12 16 - 13 57  6   +15 59  9                          +   577.188
  6 12 17 - 11 36 45   +13  6 35                          +   584.396
  6 12 18 -  9 20 19   +10 12 51                          +   592.654
  6 12 19 -  7  6 59   + 7 18 23                          +   601.928
  6 12 20 -  4 55 57   + 4 23 36                          +   612.179
  6 12 21 -  2 46 30   + 1 28 52                          +   623.362
JANANA 116  6 12 21 30.426  W18.2245     659.426     SE          **
  6 12 22 -  0 37 54   - 1 25 27                          +   635.425
JANANA 116  6 12 22 17.537  523.5624     691.276     SE
  6 12 23 +  1 30 32   - 4 18 59                          +   648.314
  6 12 24 +  3 39 31   - 7 11 23                          +   661.970
  6 12 25 +  5 49 44   -10  2 20                          +   676.328
  6 12 26 +  8  1 53   -12 51 28                          +   691.322
  6 12 27 + 10 16 41   -15 38 27                          +   706.982
  6 12 28 + 12 34 52   -18 22 55                          +   722.937
  6 12 29 + 14 57 13   -21  4 29                          +   738.411
  6 12 30 + 17 24 30   -23 42 45                          +   756.229
JOBURG 118  6 12 30 53.757  W53.5768    1188.545     SE          **
  6 12 31 + 19 57 34   -26 17 18                          +   773.315
  6 12 32 + 22 37 17   -28 47 40                          +   790.593
  6 12 33 + 25 24 32   -31 13 21                          +   807.984
JOBURG 118  6 12 33 57.854  550.6002    1201.782     SE
  6 12 34 + 28 20 15   -33 33 48                          +   825.414
  6 12 35 + 31 25 21   -35 49 25                          +   842.807
  6 12 36 + 34 40 44   -37 59 32                          +   860.090
  6 12 37 + 38  7 13   -40 [illegible] 26                 +   877.190
  6 12 38 + 41 43 33   -42 [illegible] 20                 +   894.027
  6 12 39 + 45 26 16   -43 34 24                          +   910.563
  6 12 40 + 49 39 38   -45  0 45                          +   926.704
  6 12 41 + 53 55 34   -46 32 30                          +   942.397
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  6 12 42 + 58 23 33   -47 44 44                          +  957.583
  6 12 43 + 63  2 31   -48 44 37                          +  972.206
  6 12 44 + 67 50 50   -49 31 23                          +  986.214
  6 12 45 + 72 46 20   -50  4 26                          +  999.556
  6 12 46 + 77 46 22   -50 23 21                          + 1012.188
  6 12 47 + 82 47 57   -50 27 56                          + 1024.067
  6 12 48 + 87 47 59   -50 18 14                          + 1035.155
  6 12 49 + 92 43 28   -49 54 34                          + 1045.417
  6 12 50 + 97 31 44   -49 17 26                          + 1054.821
  6 12 51 +102 10 31   -48 27 34                          + 1063.341  TWILIGHT
  6 12 52 +106 38 10   -47 25 47                          + 1070.952  TWILIGHT
  6 12 53 +110 53 32   -46 13  1                          + 1077.634  TWILIGHT
  6 12 54 +114 56  4   -44 50 13                          + 1083.371  TWILIGHT
  6 12 55 +118 45 36   -43 18 21                          + 1088.150  TWILIGHT
  6 12 56 +122 22 23   -41 38 20                          + 1091.959  TWILIGHT
  6 12 57 +125 46 55   -39 51  1                          + 1094.794  TWILIGHT
  6 12 58 +128 59 53   -37 57 11                          + 1096.652  TWILIGHT
  6 12 59 +132  2  5   -35 57 35                          + 1097.532
  6 13  0 +134 54 24   -33 52 50                          + 1097.438
OOMERA 119  6 13  0 40.752  S 8.8484   1107.900    NE
  6 13  1 +137 37 43   -31 43 32                          + 1096.377
OOMERA 119  6 13  1 16.842  E 9.2216   1107.959    NE          **
  6 13  2 +140 12 53   -29 30 11                          + 1094.357
  6 13  3 +142 40 49   -27 13 14                          + 1091.392
  6 13  4 +145  2 18   -24 53  7                          + 1087.496
  6 13  5 +147 18  7   -22 30 10                          + 1082.688
  6 13  6 +149 29  1   -20  4 42                          + 1076.988
  6 13  7 +151 35 42   -17 37  1                          + 1070.419
  6 13  8 +153 38 49   -15  7 23                          + 1063.007
  6 13  9 +155 39  0   -12 36  3                          + 1054.779
  6 13 10 +157 36 52   -10  3 12                          + 1045.766
  6 13 11 +159 32 59   - 7 29  5                          + 1035.999
  6 13 12 +161 27 56   - 4 53 52                          + 1025.513
  6 13 13 +163 22 16   - 2 17 47                          + 1014.344
   6 13 13 52  LONG.   +165  2 41  PASS NO.  340 + 1003.961
  6 13 14 +165 16 31   + 0 19  0                          + 1002.530
  6 13 15 +167 11 16   + 2 36 17                          +  990.111
  6 13 16 +169  7  5   + 5 33 50                          +  977.128
  6 13 17 +171  4 32   + 8 11 29                          +  963.625
  6 13 18 +173  4 15   +10 48 57                          +  949.644
  6 13 19 +175  6 50   +13 26  2                          +  935.233
  6 13 20 +177 13  1   +16  2 26                          +  920.438
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  6 13 22 -178 20 56  +21 11 58                          +  889.891
BSANDS 100  6 13 22 19.418  W74.1548   2145.016     NE        **
  6 13 23 -175 59 25  +23 44 23                          +  874.238
  6 13 24 -173 31  3  +26 14 40                          +  858.400
  6 13 25 -170 54 50  +28 42 20                          +  842.430
  6 13 26 -168  9 42  +31  6 49                          +  826.380
  6 13 27 -165 14 31  +33 27 28                          +  810.304
  6 13 28 -162  8  6  +35 43 35                          +  794.256
BSANDS 100  6 13 28 42.711  N74.1656   1949.313     NE
  6 13 29 -158 49 13  +37 54 17                          +  778.291
  6 13 30 -155 16 39  +39 58 38                          +  762.464
  6 13 31 -151 29 17  +41 55 34                          +  746.831
  6 13 32 -147 26 10  +43 43 53                          +  731.446
  6 13 33 -143  6 39  +45 22 18                          +  716.367
  6 13 34 -138 30 34  +46 49 25                          +  701.650  TWILIGHT
  6 13 35 -133 38 19  +48  3 51                          +  687.350  TWILIGHT
  6 13 36 -128 31  9  +49  4 10                          +  673.522  TWILIGHT
  6 13 37 -123 11 11  +49 49  6                          +  660.222  TWILIGHT
STNFDU  98  6 13 37 11.206  N72.0641   1595.996     NE
  6 13 38 -117 41 24  +50 17 33                          +  647.505  TWILIGHT
GOLDST 103  6 13 38  8.884  N77.2811   1852.055     NE
  6 13 39 -112  5 36  +50 28 42                          +  635.423  TWILIGHT
WHITES 111  6 13 39 56.949  N80.6177   2030.847     SE
  6 13 40 -106 28  3  +50 22  8                          +  624.030
BOLDER  95  6 13 40 12.975  N67.5191   1334.536     SE
  6 13 41 -100 53 10  +49 57 51                          +  613.378
FTSILL 110  6 13 41 26.824  N78.4070   1844.354     SE
  6 13 42 - 95 25 10  +49 16 11                          +  603.514
ARKANS 109  6 13 42 52.455  N75.8756   1663.508     SE
  6 13 43 - 90  7 35  +48 17 56                          +  594.487
UWISCN 102  6 13 43  5.041  N47.6247    839.360     SE
2RSTON  99  6 13 43 40.452  N74.8872   1595.638     SE
UILNOS  97  6 13 43 21.995  N60.6673   1076.833     SE
  6 13 44 - 85  3 12  +47  4  6                       +  586.342
CPCAN1 107  6 13 44 55.083  N82.9177   2100.567     SE
  6 13 45 - 80 13 51  +45 35 56                          +  579.122
BPOINT 126  6 13 45 40.876  N53.6176    904.343     SE
BELVOR 113  6 13 45 40.258  N52.2769    881.990     SE
ABDEEN 112  6 13 45 54.450  N45.1702    781.840     SE
LANGLY 106  6 13 45 50.125  N58.6595   1001.449     SE
PNSTAT  96  6 13 45 30.514  N40.5338    735.460     SE
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PDRSPG 117  6 13 46   1.928  N64.4472   1147.456    SE
LINCON 105  6 13 46  58.288  S 6.6092    571.227    SE
FTMONM 104  6 13 46  22.466  N32.4677    665.599    SE
LINCON 105  6 13 46  41.870  W10.3492    577.711    SE        **
UWISCM 102  6 13 46  27.121  E73.1071   1468.344    SE        **
  6 13 47 - 71 23 27  +42  1 56                                  +  567.613
FTMONM 104  6 13 47  51.929  E46.3450    783.341    SE        **
UILNOS  97  6 13 47  56.234  E80.8618   1908.538    SE        **
PNSTAT  96  6 13 47  36.438  E57.8117    968.732    SE        **
  6 13 48 - 67 22 18  +39 58 49                                  +  563.393
BELVOR 113  6 13 48  35.167  E67.4522   1223.041    SE        **
ABDEEN 112  6 13 48  13.970  E60.6153   1028.298    SE        **
  6 13 49 - 63 36 16  +37 46 39                                  +  560.236
  6 13 50 - 60  4 22  +35 26 36                                  +  558.165
PDRSPG 117  6 13 50   4.589  E75.9603   1587.466    SE        **
ZRSTON  99  6 13 50  18.926  E89.5507   2676.884    SE        **
  6 13 51 - 56 45 23  +32 59 46                                  +  557.201
  6 13 52 - 53 38  6  +30 27  5                                  +  557.357
  6 13 53 - 50 41 16  +27 49 26                                  +  558.642
  6 13 54 - 47 53 40  +25  7 36                                  +  561.061
  6 13 55 - 45 14  8  +22 22 17                                  +  564.610
  6 13 56 - 42 41 37  +19 34  6                                  +  569.282
  6 13 57 - 40 15  3  +16 43 39                                  +  575.061
  6 13 58 - 37 53 32  +13 51 25                                  +  581.928
  6 13 59 - 35 36  8  +10 57 55                                  +  589.856
  6 14  0 - 33 22  2  + 8  3 34                                  +  598.812
  6 14  1 - 31 10 28  + 5  8 48                                  +  608.759
  6 14  2 - 29  0 39  + 2 13 59                                  +  619.652
  6 14  3 - 26 51 52  - 0 40 31                                  +  631.444
  6 14  4 - 24 43 26  - 3 34 19                                  +  644.079
  6 14  5 - 22 34 37  - 6 27  6                                  +  657.500
  6 14  6 - 20 24 45  - 9 18 29                                  +  671.644
  6 14  7 - 18 13  8  -12  8 10                                  +  686.446
  6 14  8 - 15 59  2  -14 55 47                                  +  701.836
  6 14  9 - 13 41 44  -17 40 59                                  +  717.744
  6 14 10 - 11 20 29  -20 23 22                                  +  734.095
  6 14 11 -  8 54 30  -23  2 34                                  +  750.813
  6 14 12 -  6 22 56  -25 38 10                                  +  767.824
  6 14 13 -  3 44 57  -28  9 42                                  +  785.050
  6 14 14 -  0 59 39  -30 36 40                                  +  802.414
  6 14 15 +  1 53 53  -32 58 33                                  +  819.841
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6	14	16	+	4	56	34	-35	14	45	+ 837.254
6	14	17	+	8	9	18	-37	24	38	+ 854.579
6	14	18	+	11	32	58	-39	27	29	+ 871.744
6	14	19	+	15	8	19	-41	22	31	+ 888.677
6	14	20	+	18	55	55	-43	8	56	+ 905.312
6	14	21	+	22	56	10	-44	45	52	+ 921.580
6	14	22	+	27	9	1	-46	12	24	+ 937.421
6	14	23	+	31	34	8	-47	27	39	+ 952.772
6	14	24	+	36	10	32	-48	30	44	+ 967.578
6	14	25	+	40	56	46	-49	20	53	+ 981.784
6	14	26	+	45	50	46	-49	57	27	+ 995.341
6	14	27	+	50	50	0	-50	19	57	+ 1008.202
6	14	28	+	55	51	34	-50	28	8	+ 1020.323
6	14	29	+	60	52	21	-50	22	0	+ 1031.664
6	14	30	+	65	49	18	-50	1	47	+ 1042.191
6	14	31	+	70	39	40	-49	27	58	+ 1051.870
6	14	32	+	75	21	3	-48	41	12	+ 1060.673
6	14	33	+	79	51	40	-47	42	18	+ 1068.574 TWILIGHT
6	14	34	+	84	10	13	-46	32	11	+ 1075.554 TWILIGHT
6	14	35	+	88	10	1	-45	11	48	+ 1081.593 TWILIGHT
6	14	36	+	92	8	49	-43	42	6	+ 1086.678 TWILIGHT
6	14	37	+	95	48	46	-42	4	1	+ 1090.798 TWILIGHT
6	14	38	+	99	16	19	-40	18	26	+ 1093.946 TWILIGHT
6	14	39	+102	32	6		-38	26	9	+ 1096.117 TWILIGHT
6	14	40	+105	36	55		-36	27	55	+ 1097.310 TWILIGHT
6	14	41	+108	31	37		-34	24	24	+ 1097.529
6	14	42	+111	17	5		-32	16	11	+ 1096.778
6	14	43	+113	54	13		-30	3	48	+ 1095.067
6	14	44	+116	23	52		-27	47	43	+ 1092.407
6	14	45	+118	46	52		-25	28	21	+ 1088.811
6	14	46	+121	4	1		-23	6	5	+ 1084.297
6	14	47	+123	16	4		-20	41	14	+ 1078.885
6	14	48	+125	23	43		-18	14	7	+ 1072.597
6	14	49	+127	27	39		-15	44	58	+ 1065.457
6	14	50	+129	28	29		-13	14	3	+ 1057.493
6	14	51	+131	26	51		-10	41	35	+ 1048.734
6	14	52	+133	23	21		-	8	7 47	+ 1039.212
6	14	53	+135	18	30		-	5	32 52	+ 1028.959
6	14	54	+137	12	54		-	2	57 0	+ 1018.012
6	14	55	+139	7	6		-	0	20 25	+ 1006.407
6	14	55	7	LONG.			+139	22	0	PASS NO. 341 + 1004.816
6	14	56	+141	1	39		+	2	16 43	+ 994.184

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  6 15  1 +151  0  2  +15 23  0                          +  925.277
  6 15  2 +153  9 19  +17 58 39                          +  910.253
  6 15  3 +155 23 29  +20 33  5                          +  894.926
  6 15  4 +157 43 21  +23  5 55                          +  879.347
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  6 15  7 +165 26 36  +30 30 22                          +  831.606
  6 15  8 +168 19  3  +32 52  2                          +  815.533
  6 15  9 +171 22 26  +35  9 20                          +  799.469
  6 15 10 +174 37 57  +37 21 27                          +  783.471
  6 15 11 +178  6 51  +39 27 29                          +  767.591
  6 15 12 -178  9 45  +41 26 23                          +  751.887
  6 15 13 -174 10 49  +43 17  0                          +  736.413
  6 15 14 -169 55 38  +44 58  3                          +  721.226
  6 15 15 -165 23 52  +46 28 11                          +  706.382
  6 15 16 -160 35 47  +47 46  0                          +  691.936  TWILIGHT
  6 15 17 -155 32 22  +48 50  4                          +  677.945  TWILIGHT
  6 15 18 -150 15 32  +49 39  3                          +  664.463  TWILIGHT
  6 15 19 -144 48  2  +50 11 50                          +  651.546  TWILIGHT
  6 15 20 -139 13 28  +50 27 30                          +  639.248  TWILIGHT
  6 15 21 -133 36  0  +50 25 32                          +  627.622
  6 15 22 -128  0  6  +50  5 49                          +  616.719
  6 15 23 -122 30  0  +49 28 36                          +  606.589
STNFDU  98  6 15 23  3.618  N72.5969   1517.273    SE
  6 15 24 -117  9 29  +48 34 33                          +  597.282
GOLDST 103  6 15 24  3.376  N75.3003   1632.404    SE
  6 15 25 -112  1 30  +47 24 39                          +  588.842
  6 15 26 -107  8 11  +46  0  5                         +  581.315
WHITES 111  6 15 26  4.789  N73.7893   1522.467    SE
BOLDER  95  6 15 26 24.029  N49.1002    836.949    SE
  6 15 27 -102 30 41  +44 22 10                          +  574.741
FTSILL 110  6 15 27 56.314  N62.4363   1085.528    SE
LINCON 105  6 15 27 57.468  W86.0109   2347.765    SE       **
UWISCN 102  6 15 27 42.718  W58.9460   1002.423    SE       **
  6 15 28 - 98  9 26  +42 32 15                          +  569.157
PNSTAT  96  6 15 28 51.932  N75.4238   1573.411    SE       **
  6 15 29 - 94  4 13  +40 31 41                          +  564.597
ARKANS 109  6 15 29 51.341  N38.8330    702.819    SE
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BELVOR 113   6 15 29 50.702   W71.0677    1360.371     SE          **
ABDEEN 112   6 15 29 29.547   W74.9659    1544.800     SE          **
FTMONM 104   6 15 29  7.526   W79.5135    1816.719     SE          **
UILNOS  97   6 15 29 11.852   W40.6326     721.670     SE          **
BOLDER  95   6 15 29 11.213   E66.6329    1197.015     SE          **
  6 15 30 - 90 14 22  +38 21 45                         +   561.092
UWISCN 102   6 15 30  8.995   S48.9320     811.614     SE
2RSTON  99   6 15 30 59.545   N16.6978     581.167     SE
UILNOS  97   6 15 30 33.055   S33.4908     659.269     SE
  6 15 31 - 86 38 54  +36  3 39                         +   558.667
PDRSPG 117   6 15 31 20.227   W63.5913    1097.553     SE          **
WHITES 111   6 15 31 58.295   E85.9512    2311.687     SE          **
FTSILL 110   6 15 31 34.976   E72.7255    1424.917     SE          **
ARKANS 109   6 15 31 26.098   E46.0680     772.055     SE          **
2RSTON  99   6 15 31 34.482   E19.5726     588.997     SE          **
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CPCAN1 107   6 15 32 50.308   N36.0095     674.602     SE
  6 15 33 - 80  6 30  +31  7 13                         +   557.137
BELVOR 113   6 15 33 59.646   S69.8328    1302.604     SE
PNSTAT  96   6 15 33 44.464   S73.3817    1453.432     SE
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PDRSPG 117   6 15 34 33.346   S63.7653    1103.555     SE
ABDEEN 112   6 15 34 21.584   S74.0215    1486.940     SE
CPCAN1 107   6 15 34  6.320   E36.4597     679.455     SE          **
  6 15 35 - 74 17 10  +25 49 57                         +   560.114
FTMONM 104   6 15 35  5.481   S79.2012    1785.032     SE
  6 15 36 - 71 35 38  +23  5 28                         +   563.302
LINCON 105   6 15 36  2.129   S86.0288    2330.224     SE
  6 15 37 - 69  1 23  +20 17 57                         +   567.616
  6 15 38 - 66 33 21  +17 28  1                         +   573.045
PANTIG 120   6 15 38  6.611   W43.3306     761.665     SE          **
  6 15 39 - 64 10 35  +14 36 11                         +   579.568
  6 15 40 - 61 52 11  +11 42 57                         +   587.162
PANTIG 120   6 15 40  2.215   S50.3126     869.238     SE
  6 15 41 - 59 37 17   + 8 48 45                       +   595.796
  6 15 42 - 57 25  7   + 5 54  1                       +   605.434
  6 15 43 - 55 14 53   + 2 59  8                       +   616.033
  6 15 44 - 53  5 52   + 0  4 29                       +   627.547
  6 15 45 - 50 57 23   - 2 49 34                       +   639.922
  6 15 46 - 48 48 41   - 5 42 41                       +   653.102
  6 15 47 - 46 39  8   - 8 34 31                       +   667.026
  6 15 48 - 44 27 59  -11 24 43                        +   681.629
```

6	15	49	-	42	14	33	-14	12	56	+	696.842	
6	15	50	-	39	58	7	-16	58	50	+	712.595	
6	15	51	-	37	37	55	-19	42	2	+	728.815	
6	15	52	-	35	13	10	-22	22	8	+	745.427	
6	15	53	-	32	43	4	-24	58	45	+	762.355	
6	15	54	-	30	6	45	-27	31	24	+	779.521	
6	15	55	-	27	23	20	-29	59	38	+	796.851	
6	15	56	-	24	31	56	-32	22	55	+	814.266	
6	15	57	-	21	31	36	-34	40	40	+	831.692	
6	15	58	-	18	21	27	-36	52	16	+	849.052	
6	15	59	-	15	0	33	-38	57	0	+	866.275	
6	16	0	-	11	28	10	-40	54	8	+	883.288	
6	16	1	-	7	43	39	-42	42	51	+	900.024	
6	16	2	-	3	46	33	-44	22	18	+	916.414	
6	16	3	+	0	23	14	-45	51	34	+	932.395	
6	16	4	+	4	45	24	-47	9	46	+	947.907	
6	16	5	+	9	19	8	-48	16	1	+	962.890	
6	16	6	+	14	3	9	-49	9	31	+	977.291	
6	16	7	+	18	55	30	-49	49	33	+	991.058	
6	16	8	+	23	53	46	-50	15	38	+	1004.142	
6	16	9	+	28	55	6	-50	27	26	+	1016.500	
6	16	10	+	33	56	26	-50	24	53	+	1028.092	
6	16	11	+	38	54	41	-50	8	9	+	1038.880	
6	16	12	+	43	47	0	-49	37	41	+	1048.830	
6	16	13	+	48	30	54	-48	54	4	+	1057.913	
6	16	14	+	53	4	23	-47	58	7	+	1066.103	TWILIGHT
6	16	15	+	57	26	5	-46	50	42	+	1073.378	TWILIGHT
6	16	16	+	61	35	8	-45	32	47	+	1079.718	TWILIGHT
6	16	17	+	65	31	13	-44	5	19	+	1085.109	TWILIGHT
6	16	18	+	69	14	22	-42	29	14	+	1089.538	TWILIGHT
6	16	19	+	72	44	58	-40	45	26	+	1092.997	TWILIGHT
6	16	20	+	76	3	38	-38	54	45	+	1095.481	TWILIGHT
6	16	21	+	79	11	7	-36	57	56	+	1096.987	TWILIGHT
6	16	22	+	82	8	16	-34	55	40	+	1097.519	
6	16	23	+	84	55	57	-32	48	34	+	1097.080	
6	16	24	+	87	35	5	-30	37	11	+	1095.678	
6	16	25	+	90	6	30	-28	21	59	+	1093.323	
6	16	26	+	92	31	5	-26	[illegible]	25	+	1090.029	
6	16	27	+	94	49	37	-23	4[illegible]	51	+	1085.811	
6	16	28	+	97	2	51	-[illegible]	17	38	+	1080.689	
6	16	29	+	99	11	31	-18	51	3	+	1074.684	
6	16	30	+101	16	18		-16	22	25	+	1067.820	

```
  6 16 31 +103 17 50  -13 51 56                          + 1060.122
  6 16 32 +105 16 45  -11 19 52                          + 1051.621
  6 16 33 +107 13 38  - 8 46 24                          + 1042.345
  6 16 34 +109  9  3  - 6 11 47                          + 1032.330
  6 16 35 +111  3 34  - 3 36 10                          + 1021.607
  6 16 36 +112 57 43  - 0 59 47                          + 1010.215
   6 16 36 22  LONG.  +113 41 19  PASS NO.   342 + 1005.632
  6 16 37 +114 52  6  + 1 37 12                          +  998.193
  6 16 38 +116 47 14  + 4 14 34                          +  985.580
  6 16 39 +118 43 43  + 6 52  7                          +  972.417
  6 16 40 +120 42  8  + 9 29 37                          +  958.749
  6 16 41 +122 43  8  +12  6 50                          +  944.620
  6 16 42 +124 47 20  +14 43 32                          +  930.076
  6 16 43 +126 55 28  +17 19 23                          +  915.165
  6 16 44 +129  8 16  +19 54  7                          +  899.934
  6 16 45 +131 26 34  +22 27 21                          +  884.434
  6 16 46 +133 51 14  +24 58 40                          +  868.715
  6 16 47 +136 23 14  +27 27 38                          +  852.828
TOKAWA 108  6 16 47 22.204  S45.3973   1140.650     NE
  6 16 48 +139  3 35  +29 53 44                          +  836.826
  6 16 49 +141 53 23  +32 16 20                          +  820.762
  6 16 50 +144 53 48  +34 34 46                          +  804.689
TOKAWA 108  6 16 50  6.525  E46.8756   1107.832     NE         **
  6 16 51 +148  6  3  +36 48 15                          +  788.663
  6 16 52 +151 31 20  +38 55 54                          +  772.738
  6 16 53 +155 10 51  +40 56 41                          +  756.968
  6 16 54 +159  5 39  +42 49 31                          +  741.411
  6 16 55 +163 16 31  +44 33  7                          +  726.122
  6 16 56 +167 43 58  +46  6 10                          +  711.157
  6 16 57 +172 27 50  +47 27 15                          +  696.572  TWILIGHT
  6 16 58 +177 27 21  +48 34 58                          +  682.423  TWILIGHT
  6 16 59 -177 19  7  +49 27 56                          +  668.766  TWILIGHT
  6 17  0 -171 54  7  +50  4 59                          +  655.655  TWILIGHT
  6 17  1 -166 21  4  +50 25  8                          +  643.146  TWILIGHT
  6 17  2 -160 44  1  +50 27 45                          +  631.291  TWILIGHT
  6 17  3 -155  7 21  +50 12 36                          +  620.143
  6 17  4 -149 35 27  +49 39 52                          +  609.753
  6 17  5 -144 12 11  +48 51  7                          +  600.170
  6 17  6 -139  0 46  +47 44 13                          +  591.441
  6 17  7 -134  3 33  +46 22 20                          +  583.610
  6 17  8 -129 21 55  +44 48 46                          +  576.720
  6 17  9 -124 56 28  +43  1 50  80                      +  570.809
```

```
STNFDU  98  6 17  9 39.679  N43.5192     755.361    SE
  6 17 10 -120 47  9  +41  3 55                     +  565.912
NELCAL 121  6 17 10 58.513  N56.0352     929.131    SE
BOLDER  95  6 17 10 26.749  W70.6687    1345.567    SE        **
  6 17 11 -116 53 25  +38 56 18                     +  562.062
GOLDST 103  6 17 11  0.429  N37.7522     693.053    SE
STNFDU  98  6 17 11 40.206  E55.0278     907.267    SE        **
  6 17 12 -113 14 20  +36 40 13                     +  559.284
FTSILL 110  6 17 12 50.574  W68.9060    1267.831    SE        **
ARKANS 109  6 17 12 41.675  W82.0177    1980.986    SE        **
GOLDST 103  6 17 12 32.343  E45.2764     761.802    SE        **
2RSTON  99  6 17 12 50.038  W85.9997    2317.363    SE        **
  6 17 13 -109 48 49  +34 16 47                     +  557.603
WHITES 111  6 17 13 57.110  S21.5760     595.279    SE
WHITES 111  6 17 13 13.872  W22.8450     600.563    SE        **
  6 17 14 -106 35 37  +31 47  1                     +  557.035
BOLDER  95  6 17 14 26.175  S67.9560    1228.459    SE
  6 17 15 -103 33 30  +29 11 50                     +  557.593
CPCAN1 107  6 17 15 21.876  W85.7704    2296.485    SE        **
  6 17 16 -100 41 14  +26 32  4                     +  559.284
FTSILL 110  6 17 16 49.835  S70.2402    1325.446    SE
  6 17 17 - 97 57 38  +23 48 27                     +  562.110
  6 17 18 - 95 21 35  +21  1 39                     +  566.065
  6 17 19 - 92 52  1  +18 12 17                     +  571.139
ARKANS 109  6 17 19 52.284  S85.3260    2297.072    SE
  6 17 20 - 90 27 57  +15 20 52                     +  577.317
  6 17 21 - 88  8 28  +12 27 55                     +  584.573
  6 17 22 - 85 52 44  + 9 33 54                     +  592.881
  6 17 23 - 83 39 54  + 6 39 14                     +  602.206
  6 17 24 - 81 29 12  + 3 44 20                     +  612.505
  6 17 25 - 79 19 55  + 0 49 33                     +  623.736
QUITOE 125  6 17 25 20.844  N 4.8597     626.339    SE
QUITOE 125  6 17 25 29.701  E 3.4662     627.114    SE        **
  6 17 26 - 77 11 20  - 2  4 44                     +  635.845
  6 17 27 - 75  2 43  - 4 58 10                     +  648.778
  6 17 28 - 72 53 25  - 7 50 24                     +  662.475
  6 17 29 - 70 42 42  -10 41  6                     +  676.872
LIMAPU 124  6 17 29 23.010  S54.3854    1078.275    SE        **
  6 17 30 - 68 29 54  -13 29 55                     +  691.901
  6 17 31 - 66 14 16  -16 16 29                     +  707.493
  6 17 32 - 63 55  3  -19  0 28                     +  723.574
  6 17 33 - 61 31 30  -21 41 27                     +  740.071
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6	17	34	-	59	2	47	-24	19	2	+	756.908
6	17	35	-	56	28	6	-26	52	48	+	774.009
6	17	36	-	53	46	32	-29	22	15	+	791.296
6	17	37	-	50	57	12	-31	46	54	+	808.693
6	17	38	-	47	59	10	-34	6	10	+	826.123
6	17	39	-	44	51	31	-36	19	25	+	843.512
6	17	40	-	41	33	23	-38	26	1	+	860.786
6	17	41	-	38	3	55	-40	25	11	+	877.873
6	17	42	-	34	22	27	-42	16	9	+	894.702
6	17	43	-	30	28	28	-43	58	4	+	911.208
6	17	44	-	26	21	49	-45	30	1	+	927.324
6	17	45	-	22	2	39	-46	51	8	+	942.990
6	17	46	-	17	31	38	-48	0	29	+	958.145
6	17	47	-	12	49	59	-48	57	17	+	972.734
6	17	48	-	7	59	26	-49	40	47	+	986.706
6	17	49	-	3	2	20	-50	10	25	+	1000.010
6	17	50	+	1	58	35	-50	25	49	+	1012.601
6	17	51	+	7	0	17	-50	26	52	+	1024.439
6	17	52	+	11	59	40	-50	13	40	+	1035.484
6	17	53	+	16	53	48	-49	46	34	+	1045.703
6	17	54	+	21	40	3	-49	6	11	+	1055.064
6	17	55	+	26	16	21	-48	13	14	+	1063.540 TWILIGHT
6	17	56	+	30	41	8	-47	8	35	+	1071.107 TWILIGHT
6	17	57	+	34	53	26	-45	53	11	+	1077.747 TWILIGHT
6	17	58	+	38	52	48	-44	28	0	+	1083.441 TWILIGHT
6	17	59	+	42	39	10	-42	53	58	+	1088.178 TWILIGHT
6	18	0	+	46	12	53	-41	12	1	+	1091.947 TWILIGHT
6	18	1	+	49	34	28	-39	22	58	+	1094.744 TWILIGHT
6	18	2	+	52	44	41	-37	27	36	+	1096.564 TWILIGHT
6	18	3	+	55	44	19	-35	26	38	+	1097.409
6	18	4	+	58	34	18	-33	20	41	+	1097.282
6	18	5	+	61	15	28	-31	10	19	+	1096.189
6	18	6	+	63	48	44	-28	56	2	+	1094.141
6	18	7	+	66	14	56	-26	38	17	+	1091.149
6	18	8	+	68	34	53	-24	17	26	+	1087.229
6	18	9	+	70	49	21	-21	53	52	+	1082.399
6	18	10	+	72	59	5	-19	27	52	+	1076.679
6	18	11	+	75	4	46	-16	59	44	+	1070.093
6	18	12	+	77	7	2	-14	29	42	+	1062.665
6	18	13	+	79	6	32	-11	58	2	+	1054.424
6	18	14	+	81	3	50	-	9	24	56	+ 1045.399
6	18	15	+	82	59	33	-	6	50	37	+ 1035.623

82

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  6 18 16 + 84 54 12  - 4 15 16                          + 1025.130
  6 18 17 + 86 48 23  - 1 39  5                          + 1013.955
   6 18 17 37  LONG.  + 88  0 35  PASS NO.  343 + 1006.484
  6 18 18 + 88 42 37  + 0 57 44                          + 1002.137
  6 18 19 + 90 37 29  + 3 34 59                          +  989.715
  6 18 20 + 92 33 32  + 6 12 28                          +  976.731
  6 18 21 + 94 31 23  + 8 49 57                          +  963.226
  6 18 22 + 96 31 37  +11 27 14                          +  949.245
  6 18 23 + 98 34 55  +14  4  2                          +  934.835
  6 18 24 +100 41 56  +16 40  5                          +  920.041
  6 18 25 +102 53 26  +19 15  5                          +  904.911
  6 18 26 +105 10 13  +21 48 41                          +  889.496
  6 18 27 +107 33  8  +24 20 29                          +  873.844
  6 18 28 +110  3  8  +26 50  4                          +  858.008
  6 18 29 +112 41 12  +29 16 53                          +  842.039
  6 18 30 +115 28 26  +31 40 23                          +  825.989
  6 18 31 +118 25 58  +33 59 55                          +  809.914
TOKAWA 108  6 18 31 21.834  W72.4871   1900.397    NE          **
  6 18 32 +121 35  1  +36 14 42                          +  793.866
  6 18 33 +124 56 48  +38 23 53                          +  777.901
  6 18 34 +128 32 30  +40 26 30                          +  762.073
  6 18 35 +132 23 12  +42 21 26                          +  746.439
  6 18 36 +136 29 50  +44  7 30                          +  731.054
TOKAWA 108  6 18 36 11.976  N62.0319   1340.077    NE
  6 18 37 +140 52 56  +45 43 21                          +  715.974
  6 18 38 +145 32 33  +47  7 38                          +  701.256  TWILIGHT
  6 18 39 +150 28  5  +48 18 53                          +  686.956  TWILIGHT
  6 18 40 +155 38  8  +49 15 46                          +  673.128  TWILIGHT
  6 18 41 +161  0 22  +49 57  1                          +  659.830  TWILIGHT
  6 18 42 +166 31 38  +50 21 35                          +  647.115  TWILIGHT
  6 18 43 +172  7 58  +50 28 46                          +  635.038  TWILIGHT
  6 18 44 +177 45  6  +50 18 13                          +  623.650
  6 18 45 -176 41 25  +49 50  0                          +  613.004
  6 18 46 -171 15 38  +49  4 34                          +  603.150
  6 18 47 -166  0 57  +48  2 46                          +  594.135
  6 18 48 -160 59 56  +46 45 40                          +  586.005
  6 18 49 -156 14 12  +45 1[illegible] 31                +  578.803
  6 18 50 -151 44 34  +43 2[illegible] 40                +  572.568
  6 18 51 -147 31  8  +41 3[illegible] 29                +  567.338
  6 18 52 -143 33 27  +[illegible] 30 16                 +  563.144
STNFDU  98  6 18 52 55.742  W78.5151   1742.380    SE          **
  6 18 53 -139 50 41  +37 16 17                          +  560.016
```

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GOLDST 103  6 18 53 47.920  W82.0770    1983.847     SE          **
  6 18 54 -136 21 46   +34 54 39                     +    557.978
  6 18 55 -133  5 29   +32 26 27                     +    557.049
  6 18 56 -130  0 36   +29 52 35                     +    557.244
  6 18 57 -127  5 53   +27 13 55                     +    558.571
  6 18 58 -124 20  8   +24 31 14                     +    561.033
STNFDU  98  6 18 58 49.351  S79.9203    1840.701     SE
  6 18 59 -121 42 13   +21 45 11                     +    564.628
  6 19  0 -119 11  3   +18 56 24                     +    569.347
GOLDST 103  6 19  0 57.582  S85.2481    2283.902     SE
  6 19  1 -116 45 38   +16  5 27                     +    575.175
  6 19  2 -114 25  2   +13 12 50                     +    582.092
  6 19  3 -112  8 23   +10 19  2                     +    590.069
  6 19  4 -109 54 51   + 7 24 28                     +    599.075
  6 19  5 -107 43 38   + 4 29 33                     +    609.071
  6 19  6 -105 34  2   + 1 34 40                     +    620.013
  6 19  7 -103 25 18   - 1 19 49                     +    631.851
  6 19  8 -101 16 44   - 4 13 33                     +    644.531
  6 19  9 - 99  7 38   - 7  6 10                     +    657.994
  6 19 10 - 96 57 19   - 9 57 20                     +    672.178
  6 19 11 - 94 45  5   -12 46 43                     +    687.016
  6 19 12 - 92 30 12   -15 33 57                     +    702.439
  6 19 13 - 90 11 56   -18 18 40                     +    718.375
  6 19 14 - 87 49 31   -21  0 30                     +    734.750
  6 19 15 - 85 22 10   -23 39  3                     +    751.489
  6 19 16 - 82 49  2   -26 13 53                     +    768.515
  6 19 17 - 80  9 15   -28 44 32                     +    785.752
  6 19 18 - 77 21 55   -31 10 30                     +    803.123
SNTAGO 122  6 19 18 50.149  W29.1418     919.459     SE          **
  6 19 19 - 74 26  9   -33 31 14                     +    820.551
  6 19 20 - 71 20 58   -35 46  8                     +    837.961
SNTAGO 122  6 19 20 12.609  S24.8630     915.471     SE
  6 19 21 - 68  5 31   -37 54 32                     +    855.279
  6 19 22 - 64 38 56   -39 55 42                     +    872.432
  6 19 23 - 61  0 28   -41 48 52                     +    889.349
  6 19 24 - 57  9 37   -43 33 11                     +    905.964
  6 19 25 - 53  6  6   -45  7 46                     +    922.209
  6 19 26 - 48 49 58   -46 3  43                     +    938.022
  6 19 27 - 44 21 47   -47 [illegible]  9            +    953.344
  6 19 28 - 39 47 35   -48 4[illegible] 12           +    968.116
  6 19 29 - 34 54  0   -49 31  7                     +    982.288
  6 19 30 - 29 58 13   -50  4 18                     +    995.807
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  6 19 31 - 24 57 54   -50 23 18                          + 1008.628
  6 19 32 - 19 56  2   -50 27 57                          + 1020.707
  6 19 33 - 14 55 42   -50 18 18                          + 1032.007
  6 19 34 -  9 59 57   -49 54 38                          + 1042.490
  6 19 35 -  5 11 27   -49 17 30                          + 1052.125
  6 19 36 -  0 32 26   -48 27 36                          + 1060.884
  6 19 37 +  3 55 23   -47 25 47                          + 1068.743  TWILIGHT
  6 19 38 +  8 10 55   -46 12 59                          + 1075.679  TWILIGHT
  6 19 39 + 12 13 33   -44 50  8                          + 1081.676  TWILIGHT
  6 19 40 + 16  3 11   -43 18 13                          + 1086.719  TWILIGHT
  6 19 41 + 19 40  1   -41 38  9                          + 1090.799  TWILIGHT
  6 19 42 + 23  4 36   -39 50 47                          + 1093.907  TWILIGHT
  6 19 43 + 26 17 35   -37 56 56                          + 1096.040  TWILIGHT
JOBURG 118  6 19 43 37.918  554.9344    1682.793     NE
  6 19 44 + 29 19 47   -35 57 17                          + 1097.198  TWILIGHT
  6 19 45 + 32 12  5   -33 52 31                          + 1097.383
  6 19 46 + 34 55 22   -31 43 13                          + 1096.601
  6 19 47 + 37 30 31   -29 29 52                          + 1094.860
  6 19 48 + 39 58 24   -27 12 56                          + 1092.172
JOBURG 118  6 19 48 30.367  E58.1389    1772.468     NE        **
  6 19 49 + 42 19 50   -24 52 51                          + 1088.551
  6 19 50 + 44 35 35   -22 29 56                          + 1084.015
  6 19 51 + 46 46 25   -20  4 31                          + 1078.583
  6 19 52 + 48 53  2   -17 36 55                          + 1072.277
  6 19 53 + 50 56  5   -15  7 22                          + 1065.121
  6 19 54 + 52 56 11   -12 36  6                          + 1057.143
  6 19 55 + 54 53 58   -10  3 22                          + 1048.372
  6 19 56 + 56 49 59   - 7 29 21                          + 1038.840
  6 19 57 + 58 44 50   - 4 54 16                          + 1028.579
  6 19 58 + 60 39  3   - 2 18 19                          + 1017.625
   6 19 58 52  LONG.   + 62 19 51   PASS NO.   344 + 1007.372
  6 19 59 + 62 33 12   + 0 18 19                          + 1006.016
  6 20  0 + 64 27 49   + 2 55 26                          +  993.789
  6 20  1 + 66 23 30   + 5 32 51                          +  980.987
  6 20  2 + 68 20 48   + 8 10 19                          +  967.650
  6 20  3 + 70 20 20   +10 47 37                          +  953.823
  6 20  4 + 72 22 44   +13 24 32                          +  939.550
  6 20  5 + 74 28 43   +16  0 45                          +  924.879
  6 20  6 + 76 38 59   +18 36  0                          +  909.857
  6 20  7 + 78 54 18   +21  9 57                          +  894.531
  6 20  8 + 81 15 32   +23 42 12                          +  878.953
  6 20  9 + 83 43 35   +26 12 20                          +  863.173
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  6 20 10 + 86 19 27   +28 39 51                          +   847.243
  6 20 11 + 89  4 12   +31  4 13                          +   831.214
  6 20 12 + 91 58 56   +33 24 47                          +   815.142
  6 20 13 + 95  4 52   +35 40 49                          +   799.078
  6 20 14 + 98 23 12   +37 51 28                          +   783.079
  6 20 15 +101 55 10   +39 55 50                          +   767.199
  6 20 16 +105 41 53   +41 52 48                          +   751.494
  6 20 17 +109 44 17   +43 41 14                          +   736.019
  6 20 18 +114  3  3   +45 19 48                          +   720.831
  6 20 19 +118 38 22   +46 47 10                          +   705.986
  6 20 20 +123 29 50   +48  1 53                          +   691.540   TWILIGHT
  6 20 21 +128 36 14   +49  2 35                          +   677.549   TWILIGHT
  6 20 22 +133 55 31   +49 47 57                          +   664.068   TWILIGHT
TOKAWA 108  6 20 22 37.635  N77.5862    1895.159     NE
  6 20 23 +139 24 43   +50 16 54                          +   651.154   TWILIGHT
  6 20 24 +145  0  5   +50 28 37                          +   638.859   TWILIGHT
  6 20 25 +150 37 21   +50 22 39                          +   627.237
  6 20 26 +156 12  7   +49 58 58                          +   616.341
  6 20 27 +161 40 11   +49 17 56                          +   606.220
  6 20 28 +166 57 58   +48 20 17                          +   596.925
  6 20 29 +172  2 41   +47  7  2                          +   588.499
  6 20 30 +176 52 27   +45 39 25                          +   580.988
  6 20 31 -178 33 45   +43 58 44                          +   574.434
  6 20 32 -174 16 10   +42  6 22                          +   568.872
  6 20 33 -170 14 29   +40  3 39                          +   564.338
  6 20 34 -166 27 57   +37 51 50                          +   560.862
  6 20 35 -162 55 32   +35 32  5                          +   558.469
BSANDS 100  6 20 35 56.334  N72.3805    1406.720     SE
  6 20 36 -159 36  6   +33  5 29                          +   557.180
  6 20 37 -156 28 23   +30 33  0                          +   557.012
  6 20 38 -153 31  9   +27 55 31                          +   557.974
  6 20 39 -150 43 10   +25 13 47                          +   560.073
  6 20 40 -148  3 19   +22 28 32                          +   563.306
BSANDS 100  6 20 40  9.377  E72.3763    1421.740     SE          **
  6 20 41 -145 30 29   +19 40 24                          +   567.667
  6 20 42 -143  3 39   +16 49 56                          +   573.144
  6 20 43 -140 41 53   +13 57 41                          +   579.717
  6 20 44 -138 24 15   +11  [illegible]  7                +   587.361
  6 20 45 -136  9 57   +  8  [illegible] 41               +   596.045
  6 20 46 -133 58 12   [illegible] 14 47                  +   605.732
  6 20 47 -131 48 13   [illegible] 19 49                  +   616.381
  6 20 48 -129 39 18   -  0 34 50                         +   627.941
```

6	20	49	-127	30	43	-	3	28	50	+	640.362	
6	20	50	-125	21	48	-	6	21	49	+	653.585	
6	20	51	-123	11	49	-	9	13	26	+	667.549	
6	20	52	-121	0	6	-12		3	21	+	682.189	
6	20	53	-118	45	56	-14	51	13		+	697.436	
6	20	54	-116	28	33	-17	36	40		+	713.219	
6	20	55	-114	7	14	-20	19	20		+	729.465	
6	20	56	-111	41	11	-22	58	48		+	746.098	
6	20	57	-109	9	33	-25	34	41		+	763.043	
6	20	58	-106	31	30	-28	6	29		+	780.222	
6	20	59	-103	46	8	-30	33	45		+	797.559	
6	21	0	-100	52	32	-32	55	55		+	814.977	
6	21	1	-	97	49	47	-35	12	24	+	832.401	
6	21	2	-	94	36	57	-37	22	34	+	849.755	
6	21	3	-	91	13	12	-39	25	40	+	866.968	
6	21	4	-	87	37	44	-41	20	59	+	883.966	
6	21	5	-	83	50	0	-43	7	39	+	900.683	
6	21	6	-	79	49	37	-44	44	49	+	917.051	
6	21	7	-	75	36	34	-46	11	34	+	933.006	
6	21	8	-	71	11	16	-47	27	1	+	948.488	
6	21	9	-	66	34	37	-48	30	17	+	963.439	
6	21	10	-	61	48	8	-49	20	35	+	977.805	
6	21	11	-	56	53	51	-49	57	16	+	991.534	
6	21	12	-	51	54	20	-50	19	52	+	1004.580	
6	21	13	-	46	52	28	-50	28	8	+	1016.898	
6	21	14	-	41	51	24	-50	22	3	+	1028.447	
6	21	15	-	36	54	10	-50	1	51	+	1039.192	
6	21	16	-	32	3	34	-49	28	2	+	1049.099	
6	21	17	-	27	21	57	-48	41	15	+	1058.139	
6	21	18	-	22	51	9	-47	42	19	+	1066.285	TWILIGHT
6	21	19	-	18	32	26	-46	32	9	+	1073.516	TWILIGHT
6	21	20	-	14	26	31	-45	11	43	+	1079.814	TWILIGHT
6	21	21	-	10	33	37	-43	41	58	+	1085.162	TWILIGHT
6	21	22	-	6	53	36	-42	3	50	+	1089.550	TWILIGHT
6	21	23	-	3	26	0	-40	18	13	+	1092.970	TWILIGHT
6	21	24	-	0	10	12	-38	25	54	+	1095.416	TWILIGHT
6	21	25	+	2	54	37	-36	27	38	+	1096.887	TWILIGHT
6	21	26	+	5	49	19	-34	24	5	+	1097.384	
6	21	27	+	8	34	46	-32	13	51	+	1096.913	
6	21	28	+	11	11	52	-30	3	28	+	1095.481	
6	21	29	+	13	41	28	-27	47	24	+	1093.098	

JOBURG 118 6 21 29 45.326 W57.6113 1755.766 NE **

```
  6 21 30 + 16  4 25   +25 28  4                          + 1089.777
  6 21 31 + 18 21 31   +23  5 50                          + 1085.536
  6 21 32 + 20 33 30   -20 41  2                          + 1080.393
  6 21 33 + 22 41  6   -18 13 58                          + 1074.369
  6 21 34 + 24 44 56   -15 44 54                          + 1067.488
  6 21 35 + 26 45 42   -13 14  4                          + 1059.777
  6 21 36 + 28 44  0   -10 41 42                          + 1051.263
  6 21 37 + 30 40 23   - 8  8  1                          + 1041.977
  6 21 38 + 32 35 27   - 5 33 13                          + 1031.952
  6 21 39 + 34 29 45   + 2 57 30                          + 1021.223
  6 21 40 + 36 23 49   + 0 21  3                          + 1009.826
   6 21 40  8  LONG.   + 36 39 11  PASS NO.  345 + 1008.212
  6 21 41 + 38 18 15   + 2 15 56                          +  997.800
  6 21 42 + 40 13 34   + 4 53 15                          +  985.184
  6 21 43 + 42 10 22   + 7 30 41                          +  972.020
  6 21 44 + 44  9 15   +10  8  1                          +  958.351
  6 21 45 + 46 10 50   +12 45  0                          +  944.222
  6 21 46 + 48 15 49   +15 21 23                          +  929.679
  6 21 47 + 50 24 52   +17 56 52                          +  914.768
  6 21 48 + 52 38 47   +20 31  7                          +  899.538
  6 21 49 + 54 58 23   +23  3 48                          +  884.039
  6 21 50 + 57 24 35   +25 34 28                          +  868.321
  6 21 51 + 59 58 19   +28  2 39                          +  852.435
  6 21 52 + 62 40 38   +30 27 50                          +  836.434
  6 21 53 + 65 32 39   +32 49 23                          +  820.370
  6 21 54 + 68 35 33   +35  6 36                          +  804.298
  6 21 55 + 71 50 34   +37 18 40                          +  788.271
  6 21 56 + 75 18 52   +39 24 42                          +  772.344
  6 21 57 + 79  1 37   +41 23 38                          +  756.575
  6 21 58 + 82 59 51   +43 14 20                          +  741.016
  6 21 59 + 87 14 18   +44 55 32                          +  725.726
  6 22  0 + 91 45 18   +46 25 52                          +  710.760
  6 22  1 + 96 32 37   +47 43 57                          +  696.175  TWILIGHT
  6 22  2 +101 35 15   +48 48 22                          +  682.025  TWILIGHT
  6 22  3 +106 51 23   +49 37 47                          +  668.369  TWILIGHT
  6 22  4 +112 18 17   +50 11  3                          +  655.260  TWILIGHT
  6 22  5 +117 52 22   +50 27 16                          +  642.754  TWILIGHT
  6 22  6 +123 29 30   +50 25 53                          +  630.903  TWILIGHT
  6 22  7 +129  5 15   +50  6 46                          +  619.762
  6 22  8 +134 35 22   +49 30 11                          +  609.380
TOKAWA 108  6 22  8 30.788  N77.1598   1756.901     SE
  6 22  9 +139 56  3   +48 36 45  EB                    +  599.807
```

```
  6 22 10 +145  4 19   +47 27 26                          +   591.091
  6 22 11 +149 58  2   +46  3 26                          +   583.276
  6 22 12 +154 36  0   +44 26  1                          +   576.405
  6 22 13 +158 57 45   +42 36 34                          +   570.515
  6 22 14 +163  3 29   +40 36 25                          +   565.644
  6 22 15 +166 53 51   +38 26 50                          +   561.821
  6 22 16 +170 29 48   +36  9  3                          +   559.075
  6 22 17 +173 52 29   +33 44  8                          +   557.428
  6 22 18 +177  3  7   +31 13  5                          +   556.897
  6 22 19 -179 57  2   +28 36 49                          +   557.495
  6 22 20 -177  6 46   +25 56  7                          +   559.229
  6 22 21 -174 24 54   +23 11 42                          +   562.100
BSANDS 100  6 22 21 24.912  W75.2343    1560.491     SE         **
  6 22 22 -171 50 20   +20 24 14                          +   566.102
  6 22 23 -169 22  1   +17 34 19                          +   571.224
  6 22 24 -166 58 59   +14 42 27                          +   577.451
  6 22 25 -164 40 21   +11 49  9                          +   584.758
  6 22 26 -162 25 15   + 8 54 52                          +   593.116
  6 22 27 -160 12 53   + 6  0  2                          +   602.490
BSANDS 100  6 22 27 11.517  S80.9720    2008.390     SE
  6 22 28 -158  2 30   + 3  5  1                          +   612.839
  6 22 29 -155 53 20   + 0 10 12                          +   624.117
  6 22 30 -153 44 42   - 2 44  2                          +   636.273
  6 22 31 -151 35 54   - 5 37 21                          +   649.250
  6 22 32 -149 26 13   - 8 29 24                          +   662.988
  6 22 33 -147 14 59   -11 19 50                          +   677.423
  6 22 34 -145  1 28   -14  8 18                          +   692.487
  6 22 35 -142 44 57   -16 54 27                          +   708.109
  6 22 36 -140 24 40   -19 37 55                          +   724.218
  6 22 37 -137 59 52   -22 18 18                          +   740.738
  6 22 38 -135 29 41   -24 55 11                          +   757.593
  6 22 39 -132 53 19   -27 28  7                          +   774.707
  6 22 40 -130  9 51   -29 56 39                          +   792.003
  6 22 41 -127 18 23   -32 20 12                          +   809.404
  6 22 42 -124 17 58   -34 38 15                          +   826.834
  6 22 43 -121  7 43   -36 50  7                          +   844.218
  6 22 44 -117 46 45   -38 55  8                          +   861.483
  6 22 45 -114 14 16   -40 52 32                          +   878.556
  6 22 46 -110 29 37   -42 41 30                          +   895.368
  6 22 47 -106 32 22   -44 21 11                          +   911.852
  6 22 48 -102 22 25   -45 50 41                          +   927.944
  6 22 49 - 98  0  3   -47  9  6                          +   943.581
```

```
  6 22 50 - 93 26  5   -48 15 32                          +  958.704
  6 22 51 - 88 41 49   -49  9 11                          +  973.259
  6 22 52 - 83 49 12   -49 49 21                          +  987.194
  6 22 53 - 78 50 38   -50 15 32                          + 1000.460
  6 22 54 - 73 49  1   -50 27 25                          + 1013.011
  6 22 55 - 68 47 23   -50 24 55                          + 1024.808
  6 22 56 - 63 48 51   -50  8 13                          + 1035.810
  6 22 57 - 58 56 16   -49 37 45                          + 1045.985
  6 22 58 - 54 12  9   -48 54  8                          + 1055.303
  6 22 59 - 49 38 28   -47 58  9                          + 1063.735  TWILIGHT
  6 23  0 - 45 16 36   -46 50 41                          + 1071.258  TWILIGHT
  6 23  1 - 41  7 24   -45 32 43                          + 1077.855  TWILIGHT
  6 23  2 - 37 11 13   -44  5 12                          + 1083.507  TWILIGHT
  6 23  3 - 33 28  0   -42 29  4                          + 1088.203  TWILIGHT
  6 23  4 - 29 57 21   -40 45 13                          + 1091.933  TWILIGHT
  6 23  5 - 26 38 39   -38 54 29                          + 1094.691  TWILIGHT
  6 23  6 - 23 31 10   -36 57 38                          + 1096.475  TWILIGHT
  6 23  7 - 20 34  1   -34 55 21                          + 1097.285
  6 23  8 - 17 46 21   -32 48 14                          + 1097.125
  6 23  9 - 15  7 15   -30 36 50                          + 1096.001
  6 23 10 - 12 35 52   -28 21 39                          + 1093.925
  6 23 11 - 10 11 20   -26  3  6                          + 1090.906
  6 23 12 -  7 52 51   -23 41 34                          + 1086.962
  6 23 13 -  5 39 41   -21 17 24                          + 1082.111
  6 23 14 -  3 31  5   -18 50 53                          + 1076.371
  6 23 15 -  1 26 23   -16 22 18                          + 1069.767
SANANA 116  6 23 15 42.331  S66.1287   2040.124     NE
  6 23 16 +  0 35  6   -13 51 55                          + 1062.324
  6 23 17 +  2 33 56   -11 19 56                          + 1054.070
  6 23 18 +  4 30 43   - 8 46 35                          + 1045.035
  6 23 19 +  6 26  2   - 6 12  5                          + 1035.250
  6 23 20 +  8 20 27   - 3 36 36                          + 1024.749
  6 23 21 + 10 14 30   - 1  0 21                          + 1013.569
SANANA 116  6 23 21 22.942  E58.1245   1655.345     NE        **
   6 23 21 23  LONG.   + 10 58 30  PASS NO.  346 + 1009.015
  6 23 22 + 12  8 45   + 1 36 29                          + 1001.746
  6 23 23 + 14  3 45   + 4 13 42                          +  989.321
  6 23 24 + 16  0  6   + 6 51  5                          +  976.334
  6 23 25 + 17 58 21   + 9 28 25                          +  962.829
  6 23 26 + 19 59 10   +12  8 28                          +  948.848
  6 23 27 + 22  3 11   +14 41 59                          +  934.438
  6 23 28 + 24 11  6   +17 17 41                          +  919.644
```

6	23	29	+ 26	23	40	+19	52	14		+	904.515	
6	23	30	+ 28	41	42	+22	25	18		+	889.101	
6	23	31	+ 31	6	5	+24	56	28		+	873.450	
6	23	32	+ 33	37	45	+27	25	17		+	857.615	
6	23	33	+ 36	17	44	+29	51	14		+	841.646	
6	23	34	+ 39	7	7	+32	13	44		+	825.597	
6	23	35	+ 42	7	5	+34	32	5		+	809.522	
6	23	36	+ 45	18	49	+36	45	30		+	793.473	
6	23	37	+ 48	43	33	+38	53	8		+	777.507	
6	23	38	+ 52	22	26	+40	53	57		+	761.678	
6	23	39	+ 56	16	33	+42	46	50		+	746.043	
6	23	40	+ 60	26	42	+44	30	34		+	730.656	
6	23	41	+ 64	53	23	+46	3	48		+	715.576	
6	23	42	+ 69	36	29	+47	25	8		+	700.857	TWILIGHT
6	23	43	+ 74	35	14	+48	33	11		+	686.556	TWILIGHT
6	23	44	+ 79	48	2	+49	26	34		+	672.729	TWILIGHT
6	23	45	+ 85	12	23	+50	4	5		+	659.432	TWILIGHT
6	23	46	+ 90	44	55	+50	24	45		+	646.720	TWILIGHT
6	23	47	+ 96	21	36	+50	27	57		+	634.646	TWILIGHT
6	23	48	+101	58	3	+50	13	24		+	623.264	
6	23	49	+107	29	56	+49	41	17		+	612.626	
6	23	50	+112	53	20	+48	52	8		+	602.782	
6	23	51	+118	5	0	+47	46	51		+	593.779	
6	23	52	+123	2	36	+46	26	32		+	585.664	
6	23	53	+127	44	41	+44	52	28		+	578.480	
6	23	54	+132	10	37	+43	6	1		+	572.266	
6	23	55	+136	20	26	+41	8	32		+	567.060	
TOKAWA	108		6	23	55	15.234		N52.6630	875.221	SE		
6	23	56	+140	14	41	+39	1	17		+	562.893	
6	23	57	+143	54	16	+36	45	32		+	559.796	
TOKAWA	108		6	23	57	48.452		E61.7856	1049.555	SE	**	
6	23	58	+147	20	16	+34	22	22		+	557.792	
6	23	59	+150	33	54	+31	52	49		+	556.899	
7	0	0	+153	36	26	+29	17	49		+	557.133	
7	0	1	+156	29	5	+26	38	11		+	558.502	
7	0	2	+159	13	2	+23	54	40		+	561.009	
7	0	3	+161	49	24	+21	7	55		+	564.650	
7	0	4	+164	19	16	+18	18	34		+	569.417	
7	0	5	+166	43	35	+15	27	8		+	575.295	
7	0	6	+169	3	18	+12	34	9		+	582.261	
7	0	7	+171	19	15	+ 9	40	3		+	590.289	
7	0	8	+173	32	16	+ 6	45	17		+	599.346	

```
  7   0  9 +175 43  8   + 3 50 14                          +  609.391
  7   0 10 +177 52 35   + 0 55 18                          +  620.382
  7   0 11 -179 58 41   - 1 59  9                          +  632.266
  7   0 12 -177 49 58   - 4 52 47                          +  644.991
  7   0 13 -175 40 33   - 7 45 14                          +  658.496
  7   0 14 -173 29 44   -10 36  9                          +  672.719
  7   0 15 -171 16 50   -13 25 13                          +  687.593
SAMOAI 114  7  0 15 14.982  N 2.2193    691.881    SE
SAMOAI 114  7  0 15 19.370  E 1.5705    692.768    SE        **
  7   0 16 -169  1  7   -16 12  2                          +  703.048
  7   0 17 -166 41 50   -18 56 16                          +  719.012
  7   0 18 -164 18 13   -21 37 32                          +  735.411
  7   0 19 -161 49 27   -24 15 24                          +  752.169
  7   0 20 -159 14 41   -26 49 27                          +  769.211
  7   0 21 -156 33  3   -29 19 11                          +  786.458
  7   0 22 -153 43 40   -31 44  7                          +  803.834
  7   0 23 -150 45 33   -34  3 40                          +  821.264
  7   0 24 -147 37 50   -36 17 12                          +  838.670
  7   0 25 -144 19 37   -38 24  4                          +  855.980
  7   0 26 -140 50  3   -40 23 31                          +  873.120
  7   0 27 -137  8 27   -42 14 44                          +  890.022
  7   0 28 -133 14 20   -43 56 53                          +  906.616
  7   0 29 -129  7 31   -45 29  5                          +  922.837
  7   0 30 -124 48  9   -46 50 24                          +  938.622
  7   0 31 -120 16 55   -47 59 57                          +  953.913
  7   0 32 -115 35  1   -48 56 55                          +  968.653
  7   0 33 -110 44 12   -49 40 33                          +  982.788
  7   0 34 -105 46 49   -50 10 18                          +  996.269
  7   0 35 -100 45 36   -50 25 47                          + 1009.050
  7   0 36  - 95 43 36   -50 26 53                         + 1021.089
  7   0 37  - 90 43 56   -50 13 43                         + 1032.346
  7   0 38  - 85 49 33   -49 46 39                         + 1042.786
  7   0 39  - 81  3  3   -49  6 14                         + 1052.377
  7   0 40  - 76 26 32   -48 13 15                         + 1061.093
  7   0 41  - 72  1 34   -47  8 34                         + 1068.907  TWILIGHT
  7   0 42  - 67 49  8   -45 53  8                         + 1075.801  TWILIGHT
  7   0 43  - 63 49 40   -44 27 54                         + 1081.755  TWILIGHT
  7   0 44  - 60  3 12   -42 53 49                         + 1086.757  TWILIGHT
  7   0 45  - 56 29 26   -41 11 48                         + 1090.796  TWILIGHT
  7   0 46  - 53  7 49   -39 22 43                         + 1093.866  TWILIGHT
  7   0 47  - 49 57 35   -37 27 19                         + 1095.962  TWILIGHT
  7   0 48  - 46 57 56   -35 26 19   92                    + 1097.085  TWILIGHT
```

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  7   0 49 -  44   7 59   -33 20 21                          +  1097.237
  7   0 50 -  41  26 51   -31  9 58                          +  1096.423
  7   0 51 -  38  53 37   -28 55 41                          +  1094.653
  7   0 52 -  36  27 28   -26 37 57                          +  1091.938
  7   0 53 -  34   7 34   -24 17  8                          +  1088.293
  7   0 54 -  31  53  9   -21 53 36                          +  1083.734
  7   0 55 -  29  43 29   -19 27 40                          +  1078.281
  7   0 56 -  27  37 52   -16 59 35                          +  1071.957
  7   0 57 -  25  35 40   -14 29 39                          +  1064.786
  7   0 58 -  23  36 16   -11 58  4                          +  1056.794
  7   0 59 -  21  39  3    - 9 25  4                          +  1048.011
  7   1  0 -  19  43 26    - 6 50 52                         +  1038.470
  7   1  1 -  17  48 52    - 4 15 38                         +  1028.201
  7   1  2 -  15  54 48    - 1 39 35                         +  1017.241
SANANA 116   7  1  2 38.024   W67.7385    2026.900     NE          **
   7  1  2 38  LONG.   - 14 42 13  PASS NO.  347 + 1009.854
  7   1  3 -  14   0 41   + 0 57  5                          +  1005.626
  7   1  4 -  12   5 57   + 3 34 11                          +   993.397
  7   1  5 -  10  10  2   + 6 11 30                          +   980.591
  7   1  6 -   8  12 20   + 8 48 49                          +   967.254
  7   1  7 -   6  12 16   +11 25 56                          +   953.426
  7   1  8 -   4   9 10   +14  2 34                          +   939.153
  7   1  9 -   2   2 21   +16 38 27                          +   924.482
SANANA 116   7  1  9 55.843   N77.7316    2419.312     NE
  7   1 10 +   0   8 55   +19 13 16                          +   909.460
  7   1 11 +   2  25 27   +21 46 42                          +   894.136
  7   1 12 +   4  48  6   +24 18 21                          +   878.558
  7   1 13 +   7  17 46   +26 47 46                          +   862.779
HDLBRG 101   7  1 13 32.775   S82.1211    2642.496     NE
  7   1 14 +   9  55 29   +29 14 27                          +   846.849
  7   1 15 +  12  42 19   +31 37 50                          +   830.821
  7   1 16 +  15  39 25   +33 57 16                          +   814.748
  7   1 17 +  18  47 58   +36 11 59                          +   798.685
  7   1 18 +  22   9 11   +38 21  8                          +   782.684
  7   1 19 +  25  44 16   +40 23 46                          +   766.803
  7   1 20 +  29  34 20   +42 18 45                          +   751.097
  7   1 21 +  33  40 15   +44  4 55                          +   735.621
  7   1 22 +  38   2 35   +45 40 57                          +   720.432
  7   1 23 +  42  41 26   +47  5 27                          +   705.585
  7   1 24 +  47  36 11   +48 17  2                          +   691.139   TWILIGHT
  7   1 25 +  52  45 30   +49 14 18                          +   677.148   TWILIGHT
  7   1 26 +  58   7  5   +49 55 59                          +   663.668   TWILIGHT
```

7	1	27	+	63	37	47	+50	21	4				+	650.755	TWILIGHT
7	1	28	+	69	13	43	+50	28	49				+	638.464	TWILIGHT
7	1	29	+	74	50	35	+50	18	51				+	626.848	
7	1	30	+	80	23	59	+49	51	15				+	615.958	
7	1	31	+	85	49	52	+49	6	26				+	605.847	
7	1	32	+	91	4	46	+48	5	14				+	596.563	
7	1	33	+	96	6	9	+46	48	42				+	588.152	
7	1	34	+100	52	18		+45	18	5				+	580.658	
7	1	35	+105	22	25		+43	34	44				+	574.124	
7	1	36	+109	36	21		+41	39	59				+	568.586	
7	1	37	+113	34	32		+39	35	10				+	564.078	
7	1	38	+117	17	49		+37	21	30				+	560.631	
7	1	39	+120	47	13		+35	0	10				+	558.271	
TOKAWA	108	7	1	39	4.049		W77.0934			1651.650			SE	**	
7	1	40	+124	3	57		+32	32	11				+	557.018	
7	1	41	+127	9	15		+29	58	31				+	556.888	
7	1	42	+130	4	21		+27	20	0				+	557.893	
7	1	43	+132	50	27		+24	37	25				+	560.035	
7	1	44	+135	28	42		+21	51	26				+	563.314	
TOKAWA	108	7	1	44	44.454		579.6382			1827.734			SE		
7	1	45	+138	0	9		+19	2	41				+	567.723	
7	1	46	+140	25	50		+16	11	44				+	573.249	
7	1	47	+142	46	41		+13	19	4				+	579.871	
7	1	48	+145	3	33		+10	25	12				+	587.566	
7	1	49	+147	17	17		+ 7	30	32				+	596.301	
7	1	50	+149	28	40		+ 4	35	29				+	606.038	
7	1	51	+151	38	25		+ 1	40	27				+	616.735	
7	1	52	+153	47	18		- 1	14	12				+	628.343	
7	1	53	+155	56	0		- 4	8	7				+	640.810	
7	1	54	+158	5	12		- 7	0	56				+	654.076	
7	1	55	+160	15	37		- 9	52	20				+	668.080	
7	1	56	+162	27	57		-12	41	57				+	682.757	
7	1	57	+164	42	55		-15	29	26				+	698.037	
7	1	58	+167	1	16		-18	14	25				+	713.850	
7	1	59	+169	23	45		-20	56	31				+	730.120	
7	2	0	+171	51	10		-23	35	21				+	746.774	
7	2	1	+174	24	22		-26	10	27				+	763.735	
7	2	2	+177	4	12		-28	41	24				+	780.926	
7	2	3	+179	51	35		-31	7	39				+	798.270	
7	2	4	-177	12	34		-33	28	40				+	815.691	
7	2	5	-174	7	19		-35	43	50				+	833.113	
7	2	6	-170	51	46		-37	52	31				+	850.460	

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  7   2   7 -167 25   5   -39 53 57                          +  867.661
  7   2   8 -163 46  31   -41 47 23                          +  884.645
  7   2   9 -159 55  32   -43 31 56                          +  901.342
  7   2  10 -155 51  50   -45  6 46                          +  917.687
  7   2  11 -151 35  32   -46 30 56                          +  933.615
  7   2  12 -147  7   7   -47 43 34                          +  949.068
  7   2  13 -142 27  41   -48 43 47                          +  963.986
  7   2  14 -137 38  50   -49 30 51                          +  978.317
  7   2  15 -132 42  46   -50  4  9                          +  992.009
  7   2  16 -127 42  9    -50 23 15                          + 1005.015
  7   2  17 -122 39  59   -50 27 58                          + 1017.292
  7   2  18 -117 39  23   -50 18 21                          + 1028.799
  7   2  19 -112 43  20   -49 54 42                          + 1039.501
  7   2  20 -107 54  35   -49 17 34                          + 1049.364
  7   2  21 -103 15  22   -48 27 39                          + 1058.360
  7   2  22 - 98 47  22   -47 25 47                          + 1066.463  TWILIGHT
  7   2  23 - 94 31  41   -46 12 56                          + 1073.651  TWILIGHT
  7   2  24 - 90 28  55   -44 50  2                          + 1079.906  TWILIGHT
  7   2  25 - 86 39  12   -43 18  4                          + 1085.213  TWILIGHT
  7   2  26 - 83  2  18   -41 37 57                          + 1089.561  TWILIGHT
  7   2  27 - 79 37  41   -39 50 32                          + 1092.941  TWILIGHT
  7   2  28 - 76 24  41   -37 56 38                          + 1095.349  TWILIGHT
  7   2  29 - 73 22  28   -35 56 58                          + 1096.784  TWILIGHT
SNTAGO 122   7   2 29 56.257   S 5.6948    1101.188     NE
  7   2  30 - 70 30  11   -33 52 11                          + 1097.248
AGASTA 123   7   2 30   4.765   S52.9760    1630.833     NE
SNTAGO 122   7   2 30 20.050   E 6.2169    1102.023     NE          **
  7   2  31 - 67 46  55   -31 42 51                          + 1096.745
  7   2  32 - 65 11  48   -29 29 30                          + 1095.282
  7   2  33 - 62 43  58   -27 12 36                          + 1092.872
  7   2  34 - 60 22  36   -24 52 31                          + 1089.526
AGASTA 123   7   2 34 31.568   E53.6648    1636.473     NE          **
  7   2  35 - 58  6  53   -22 29 39                          + 1085.262
  7   2  36 - 55 56  6    -20  4 17                          + 1080.098
  7   2  37 - 53 49  34   -17 36 45                          + 1074.056
  7   2  38 - 51 46  36   -15  7 16                          + 1067.158
  7   2  39 - 49 46  34   -12 34  6                          + 1059.433
  7   2  40 - 47 48  53   -10    27                          + 1050.907
  7   2  41 - 45 52  57   - 7 2  33                          + 1041.611
  7   2  42 - 43 58  12   - 4 54 36                          + 1031.577
  7   2  43 - 42  4   5   - 2 18 46                          + 1020.842
   7   2 43 53  LONG.   - 40 22 57  PASS NO.   348 + 1010.729
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  7   2 44 -  40 10  3   + 0 17 43                          + 1009.439
  7   2 45 -  38 15 34   + 2 54 42                          +  997.409
  7   2 46 -  36 20  1   + 5 31 56                          +  984.790
  7   2 47 -  34 22 52   + 8  9 15                          +  971.624
  7   2 48 -  32 23 30   +10 46 23                          +  957.954
  7   2 49 -  30 21 16   +13 23  7                          +  943.825
  7   2 50 -  28 15 29   +15 59 10                          +  929.282
  7   2 51 -  26  5 27   +18 34 15                          +  914.371
  7   2 52 -  23 50 22   +21  8  2                          +  899.143
  7   2 53 -  21 29 25   +23 40  7                          +  883.644
  7   2 54 -  19  1 40   +26 10  6                          +  867.927
  7   2 55 -  16 26  9   +28 37 29                          +  852.041
  7   2 56 -  13 41 47   +31  1 43                          +  836.040
  7   2 57 -  10 47 29   +33 22 11                          +  819.976
  7   2 58 -   7 42  2   +35 38  8                          +  803.903
  7   2 59 -   4 24 13   +37 48 45                          +  787.875
  7   3  0 -   0 52 51   +39 53  6                          +  771.948
  7   3  1 +   2 53 13   +41 50  7                          +  756.176
  7   3  2 +   6 54 56   +43 38 38                          +  740.616
HDLBRG 101   7   3   2 25.513   S41.5256     942.950     NE
  7   3  3 +  11 12 57   +45 17 22                          +  725.325
  7   3  4 +  15 47 29   +46 44 56                          +  710.358
HDLBRG 101   7   3   6 27.515   E71.8925    1622.706     NE         **
  7   3  5 +  20 38 11   +47 59 57                          +  695.771   TWILIGHT
  7   3  6 +  25 43 50   +49  1  0                          +  681.622   TWILIGHT
  7   3  7 +  31  2 26   +49 46 48                          +  667.966   TWILIGHT
  7   3  8 +  36 31  3   +50 16 14                          +  654.859   TWILIGHT
  7   3  9 +  42  5 58   +50 28 30                          +  642.355   TWILIGHT
  7   3 10 +  47 42 57   +50 23  7                          +  630.510   TWILIGHT
  7   3 11 +  53 17 35   +50  0  3                          +  619.374
  7   3 12 +  58 45 42   +49 19 38                          +  609.001
  7   3 13 +  64  3 40   +48 22 35                          +  599.440
  7   3 14 +  69  8 42   +47  9 55                          +  590.737
  7   3 15 +  73 58 52   +45 42 50                          +  582.939
  7   3 16 +  78 33  8   +44  2 40                          +  576.086
  7   3 17 +  82 51 13   +42 10 45                          +  570.220
  7   3 18 +  86 53 24   +40  8 26                          +  565.374
  7   3 19 +  90 40 27   +37 [illegible] 57                 +  561.580
  7   3 20 +  94 13 19   +35 [illegible] 31                 +  558.866
  7   3 21 +  97 33 13   +33 [illegible] 10                 +  557.254
  7   3 22 + 100 41 22   +30 38 53                          +  556.761
  7   3 23 + 103 39  0   +28  1 33                          +  557.400
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7	3	24	+106	27	20	+25	19	56	+	559.177	
7	3	25	+109	7	32	+22	34	46	+	562.093	
7	3	26	+111	40	39	+19	46	40	+	566.143	
7	3	27	+114	7	46	+16	56	13	+	571.314	
7	3	28	+116	29	47	+14	3	56	+	577.591	
7	3	29	+118	47	38	+11	10	18	+	584.949	
7	3	30	+121	2	8	+ 8	15	46	+	593.357	
7	3	31	+123	14	4	+ 5	20	45	+	602.782	
7	3	32	+125	24	12	+ 2	25	39	+	613.180	
7	3	33	+127	33	16	- 0	29	10	+	624.507	
7	3	34	+129	41	59	- 3	23	21	+	636.708	
7	3	35	+131	51	1	- 6	16	32	+	649.729	
7	3	36	+134	1	6	- 9	8	22	+	663.509	
7	3	37	+136	12	54	-11	58	31	+	677.981	
7	3	38	+138	27	10	-14	46	38	+	693.079	
7	3	39	+140	44	37	-17	32	20	+	708.733	
7	3	40	+143	6	0	-20	15	16	+	724.867	
7	3	41	+145	32	8	-22	55	1	+	741.409	
7	3	42	+148	3	49	-25	31	10	+	758.283	
7	3	43	+150	41	56	-28	3	16	+	775.410	
7	3	44	+153	27	21	-30	30	49	+	792.714	
7	3	45	+156	21	1	-32	53	16	+	810.119	
7	3	46	+159	23	51	-35	10	2	+	827.548	
7	3	47	+162	36	45	-37	20	28	+	844.926	
7	3	48	+166	0	37	-39	23	51	+	862.181	
7	3	49	+169	36	11	-41	19	26	+	879.240	
7	3	50	+173	24	3	-43	6	21	+	896.034	
7	3	51	+177	24	35	-44	43	45	+	912.496	
7	3	52	-178	22	11	-46	10	44	+	928.562	
7	3	53	-173	56	40	-47	26	23	+	944.170	
7	3	54	-169	19	48	-48	29	50	+	959.262	
7	3	55	-164	33	3	-49	20	17	+	973.782	
7	3	56	-159	38	29	-49	57	6	+	987.680	
7	3	57	-154	38	39	-50	19	48	+	1000.907	
7	3	58	-149	36	30	-50	28	8	+	1013.418	
7	3	59	-144	35	9	-50	22	6	+	1025.172	
7	4	0	-139	37	38	-50	[illegible]	55	+	1036.132	
7	4	1	-134	46	46	-49	[illegible]	9	+	1046.264	
7	4	2	-130	4	55	-48	[illegible]	17	+	1055.538	
7	4	3	-125	33	56	-47	[illegible]	19	+	1063.926	TWILIGHT
7	4	4	-121	15	3	-46	[illegible]	7	+	1071.407	TWILIGHT
7	4	5	-117	9	0	-45	[illegible]	38	+	1077.960	TWILIGHT

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  7   4   6 -113 16   0   -43 41 50                          + 1083.571   TWILIGHT
  7   4   7 -109 35 55   -42  3 39                           + 1088.225   TWILIGHT
  7   4   8 -106  8 17   -40 17 58                           + 1091.916   TWILIGHT
  7   4   9 -102 52 27   -38 25 36                           + 1094.636   TWILIGHT
  7   4  10 - 99 47 37   -36 27 18                           + 1096.384   TWILIGHT
  7   4  11 - 96 52 56   -34 23 44                           + 1097.159
  7   4  12 - 94  7 30   -32 15 29                           + 1096.966
  7   4  13 - 91 30 26   -30  3  6                           + 1095.813
  7   4  14 - 89  0 52   -27 47  2                           + 1093.708
  7   4  15 - 86 37 58   -25 27 44                           + 1090.664
  7   4  16 - 84 20 55   -23  5 32                           + 1086.696
  7   4  17 - 82  9  0   -20 40 46                           + 1081.822
  7   4  18 - 80  1 29   -18 13 46                           + 1076.064
  7   4  19 - 77 57 42   -15 44 46                           + 1069.443
LIMAPU 124   7   4 19 23.829   S19.9418    1123.997     NE
  7   4  20 - 75 57  1   -13 14  1                          + 1061.986
LIMAPU 124   7   4 20 34.362   E15.7408    1092.359     NE          **
  7   4  21 - 73 58 48   -10 41 45                          + 1053.719
  7   4  22 - 72  2 30   - 8  8 10                          + 1044.672
  7   4  23 - 70  7 32   - 5 33 29                          + 1034.878
  7   4  24 - 68 13 21   - 2 57 54                          + 1024.370
  7   4  25 - 66 19 23   - 0 21 35                          + 1013.184
   7   4  25   8   LONG.   - 66   3 37   PASS NO.   349 + 1011.554
  7   4  26 - 64 25  5   + 2 15 15                          + 1001.357
  7   4  27 - 62 29 54   + 4 52 25                          +  988.928
PANTIG 120   7   4 27 22.188   S59.5902    1663.870     NE
  7   4  28 - 60 33 15   + 7 29 41                          +  975.940
  7   4  29 - 58 34 31   +10  6 51                          +  962.432
  7   4  30 - 56 33  6   +12 43 40                          +  948.451
  7   4  31 - 54 28 19   +15 19 52                          +  934.041
PANTIG 120   7   4 31 41.781   E51.6230    1361.634     NE          **
  7   4  32 - 52 19 29   +17 55 11                          +  919.248
  7   4  33 - 50  5 48   +20 29 16                          +  904.119
  7   4  34 - 47 46 27   +23  1 47                          +  888.705
  7   4  35 - 45 20 34   +25 32 17                          +  873.055
  7   4  36 - 42 47 10   +28  0 20                          +  857.220
  7   4  37 - 40  5 14   +30 25 23                          +  841.251
  7   4  38 - 37 13 37   +32 46 50                          +  825.202
  7   4  39 - 34 11 10   +35  3 58                          +  809.125
  7   4  40 - 30 56 42   +37 15 59                          +  793.076
  7   4  41 - 27 28 58   +39 21 59                          +  777.109
  7   4  42 - 23 46 50   +41 20 57                          +  761.279
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  7   4 43 - 19 49 17   +43 11 44                          +   745.642
  7   4 44 - 15 35 34   +44 53  4                          +   730.254
  7   4 45 - 11  5 19   +46 23 36                          +   715.172
HDLBRG 101   7   4 47 42.968   W37.3348     827.297     NE          **
  7   4 46 -  6 18 47   +47 41 57                          +   700.452   TWILIGHT
  7   4 47 -  1 16 54   +48 46 42                          +   686.150   TWILIGHT
  7   4 48 +  3 58 32   +49 36 32                          +   672.324   TWILIGHT
HDLBRG 101   7   4 48 52.202   N 7.4195     665.193     NE
  7   4 49 +  9 24 49   +50 10 16                          +   659.028   TWILIGHT
  7   4 50 + 14 58 24   +50 27  1                          +   646.318   TWILIGHT
  7   4 51 + 20 35 11   +50 26 13                          +   634.248   TWILIGHT
  7   4 52 + 26 10 47   +50  7 42                          +   622.873
  7   4 53 + 31 40 53   +49 31 43                          +   612.243
  7   4 54 + 37  1 43   +48 38 53                          +   602.409
  7   4 55 + 42 10 16   +47 30 10                          +   593.419
HDLBRG 101   7   4 53  9.839   E72.1013    1760.382     SE          **
  7   4 56 + 47  4 22   +46  6 42                          +   585.320
  7   4 57 + 51 42 47   +44 29 48                          +   578.154
  7   4 58 + 56  5  1   +42 40 49                          +   571.962
  7   4 59 + 60 11 16   +40 41  5                          +   566.780
  7   5  0 + 64  2  8   +38 31 52                          +   562.642
  7   5  1 + 67 38 34   +36 14 23                          +   559.576
  7   5  2 + 71  1 43   +33 49 44                          +   557.606
  7   5  3 + 74 12 47   +31 18 55                          +   556.751
  7   5  4 + 77 13  2   +28 42 48                          +   557.025
  7   5  5 + 80  3 40   +26  2 14                          +   558.437
  7   5  6 + 82 45 52   +23 17 54                          +   560.988
  7   5  7 + 85 20 45   +20 30 30                          +   564.677
  7   5  8 + 87 49 21   +17 40 35                          +   569.493
  7   5  9 + 90 12 37   +14 48 42                          +   575.420
  7   5 10 + 92 31 29   +11 55 21                          +   582.437
  7   5 11 + 94 46 47   + 9  0 59                          +   590.516
  7   5 12 + 96 59 20   + 6  6  2                          +   599.623
  7   5 13 + 99  9 53   + 3 10 53                          +   609.718
  7   5 14 +101 19 12   + 0 15 55                          +   620.757
  7   5 15 +103 27 58   - 2 [illegible] 30                 +   632.689
  7   5 16 +105 36 53   - 5 [illegible]  1                 +   645.458
  7   5 17 +107 46 40   - 8 [illegible] 16                 +   659.006
  7   5 18 +109 58  1   -11 [illegible] 56                 +   673.267
  7   5 19 +112 11 36   -14 [illegible] 39                 +   688.177
  7   5 20 +114 28 12   -16 50  3                          +   703.664
  7   5 21 +116 48 32   -19 33 47                          +   719.655
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  7   5 22 +119 13 25   -22 14 26                          +   736.078
  7   5 23 +121 43 40   -24 51 36                          +   752.856
  7   5 24 +124 20  6   -27 24 50                          +   769.911
  7   5 25 +127  3 38   -29 53 38                          +   787.168
OOMERA 119  7  5 25 29.846  W50.2357    1157.409     SE         **
  7   5 26 +129 55 10   -32 17 29                          +   804.549
  7   5 27 +132 55 38   -34 35 48                          +   821.979
  7   5 28 +136  5 58   -36 47 57                          +   839.381
OOMERA 119  7  5 28 12.272  S43.7537    1109.944     SE
  7   5 29 +139 27  2   -38 53 14                          +   856.682
  7   5 30 +142 59 37   -40 50 54                          +   873.810
  7   5 31 +146 44 24   -42 40  8                          +   890.694
  7   5 32 +150 41 48   -44 20  4                          +   907.267
  7   5 33 +154 51 55   -45 49 47                          +   923.463
  7   5 34 +159 14 29   -47  8 24                          +   939.221
  7   5 35 +163 48 41   -48 15  2                          +   954.481
  7   5 36 +168 33 12   -49  8 51                          +   969.186
  7   5 37 +173 26  6   -49 49  9                          +   983.285
  7   5 38 +178 24 57   -50 15 27                          +   996.728
  7   5 39 -176 33  7   -50 27 24                          +  1009.470
  7   5 40 -171 31 12   -50 24 57                          +  1021.466
  7   5 41 -166 32 22   -50  8 17                          +  1032.681
  7   5 42 -161 39 32   -49 37 49                          +  1043.078
  7   5 43 -156 55 11   -48 54 11                          +  1052.626
  7   5 44 -152 21 17   -47 58 10                          +  1061.298
  7   5 45 -147 59 15   -46 50 40                          +  1069.069  TWILIGHT
  7   5 46 -143 49 55   -45 32 38                          +  1075.919  TWILIGHT
  7   5 47 -139 53 38   -44  5  4                          +  1081.831  TWILIGHT
  7   5 48 -136 10 20   -42 28 53                          +  1086.792  TWILIGHT
  7   5 49 -132 39 37   -40 44 59                          +  1090.792  TWILIGHT
  7   5 50 -129 20 54   -38 54 12                          +  1093.823  TWILIGHT
  7   5 51 -126 13 23   -36 57 19                          +  1095.882  TWILIGHT
  7   5 52 -123 16 15   -34 55  0                          +  1096.970
  7   5 53 -120 28 36   -32 47 52                          +  1097.089
  7   5 54 -117 49 32   -30 36 28                          +  1096.244
  7   5 55 -115 18 11   -28 21 17                          +  1094.445
  7   5 56 -112 53 41   -26  2 45                          +  1091.704
  7   5 57 -110 35 17   -23 41 14                          +  1088.034
  7   5 58 -108 22  9   -21 17  6                          +  1083.453
  7   5 59 -106 13 37   -18 50 39                          +  1077.980
  7   6  0 -104  8 59   -16 22  8                          +  1071.638
  7   6  1 -102  7 35   -13 51 49   /co                    +  1064.452
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  7   6   2 -100   8 51   -11 19 56                          +  1056.447
  7   6   3 -  98 12  8   - 8 46 42                          +  1047.653
  7   6   4 -  96 16 55   - 6 12 18                          +  1038.101
  7   6   5 -  94 22 36   - 3 36 57                          +  1027.825
  7   6   6 -  92 28 40   - 1  0 50                          +  1016.858
   7   6   6 23  LONG.    - 91 44 18  PASS NO.   350 +  1012.343
  7   6   7 -  90 34 32   + 1 35 51                          +  1005.239
  7   6   8 -  88 39 39   + 4 12 55                          +   993.006
  7   6   9 -  86 43 27   + 6 50  8                          +   980.198
2RSTON  99  7   6   9  1.701   S87.7067    3415.336     NE
  7   6  10 -  84 45 20   + 9 27 19                          +   966.858
  7   6  11 -  82 44 42   +12  4 12                          +   953.030
  7   6  12 -  80 40 52   +14 40 32                          +   938.757
CPCAN1 107  7   6  12  2.213   S66.4679    1848.962     NE
  7   6  13 -  78 33 10   +17 16  4                          +   924.086
BELVOR 113  7   6  13 38.804   S78.8111    2505.544     NE
PNSTAT  96  7   6  13 18.719   S82.8110    2832.237     NE
  7   6  14 -  76 20 49   +19 50 27                          +   909.064
PDRSPG 117  7   6  14 21.795   S69.6566    1935.564     NE
ABDEEN 112  7   6  14  7.128   S78.2977    2454.773     NE
  7   6  15 -  74  3  3   +22 23 21                          +   893.740
FTMONM 104  7   6  15  0.501   S76.2277    2287.862     NE
  7   6  16 -  71 38 58   +24 54 21                          +   878.163
LINCON 105  7   6  16  3.617   S76.1043    2248.801     NE
  7   6  17 -  69  7 37   +27 23  2                          +   862.384
CPCAN1 107  7   6  17 20.515   E62.0235    1548.824     NE          **
  7   6  18 -  66 27 59   +29 48 51                          +   846.454
  7   6  19 -  63 39  1   +32 11 14                          +   830.425
  7   6  20 -  60 39 30   +34 29 29                          +   814.352
PDRSPG 117  7   6  20 20.038   E68.8358    1732.006     NE          **
ARKANS 109  7   6  20 13.755   E87.5865    3060.122     NE          **
2RSTON  99  7   6  20  4.774   E83.2904    2659.993     NE          **
  7   6  21 -  57 28 16   +36 42 51                          +   798.287
BELVOR 113  7   6  21 55.763   E78.5845    2231.411     NE          **
  7   6  22 -  54  4  6   +38 50 26                          +   782.286
ABDEEN 112  7   6  22 18.320   E78.7439    2230.278     NE          **
FTMONM 104  7   6  22 41.700   E77.8037    2153.144     NE          **
PNSTAT  96  7   6  22 58.159   E83.0019    2536.261     NE          **
  7   6  23 -  50 25 49   +40 5[illegible] 16                          +   766.403
LINCON 105  7   6  23 55.785   E79.8077    2253.124     NE          **
  7   6  24 -  46 32 23   +42 44 13                          +   750.695
  7   6  25 -  42 22 56   +44 28  4                          +   735.217
```

```
  7   6 26 -  37 57  1   +46  1 29                          +   720.026
HOLBRG 101   7   6 28 58.195   W84.8916    2501.775     NE         **
  7   6 27 -  33 14 41   +47 23  4                          +   705.179
  7   6 28 -  28 16 41   +48 31 26                          +   690.731  TWILIGHT
  7   6 29 -  23  4 36   +49 25 12                          +   676.740  TWILIGHT
  7   6 30 -  17 40 54   +50  3 10                          +   663.261  TWILIGHT
  7   6 31 -  12  8 54   +50 24 21                          +   650.351  TWILIGHT
  7   6 32 -   6 32 36   +50 28  7                          +   638.063  TWILIGHT
  7   6 33 -   0 56 21   +50 14 10                          +   626.452
  7   6 34 +   4 35 29   +49 42 39                          +   615.570
HOLBRG 101   7   6 34 45.562   S 3.3731     608.210     SE
  7   6 35 +   9 59  0   +48 54  7                          +   605.469
  7   6 36 +  15 10 55   +47 49 25                          +   596.196
HOLBRG 101   7   6 34 25.148   W 4.6739     555.321     SE         **
  7   6 37 +  20  8 51   +46 29 40                          +   587.800
  7   6 38 +  24 51 22   +44 56  7                          +   580.325
  7   6 39 +  29 17 47   +43 10  9                          +   573.811
  7   6 40 +  33 28  6   +41 13  5                          +   568.296
  7   6 41 +  37 22 51   +39  6 13                          +   563.816
  7   6 42 +  41  2 55   +36 50 47                          +   560.400
  7   6 43 +  44 29 23   +34 27 54                          +   558.073
  7   6 44 +  47 43 28   +31 58 35                          +   556.857
  7   6 45 +  50 46 25   +29 23 46                          +   556.767
  7   6 46 +  53 39 26   +26 44 16                          +   557.814
  7   6 47 +  56 23 43   +24  0 51                          +   560.001
  7   6 48 +  59  0 25   +21 14 10                          +   563.326
  7   6 49 +  61 30 33   +18 24 49                          +   567.784
  7   6 50 +  63 55  8   +15 33 23                          +   573.360
  7   6 51 +  66 15  4   +12 40 21                          +   580.033
  7   6 52 +  68 31 14   + 9 46 11                          +   587.779
  7   6 53 +  70 44 28   + 6 51 19                          +   596.564
  7   6 54 +  72 55 29   + 3 56  8                          +   606.352
  7   6 55 +  75  5  4   + 1  1  3                          +   617.098
  7   6 56 +  77 13 57   - 1 53 34                          +   628.753
  7   6 57 +  79 22 47   - 4 47 23                          +   641.265
  7   6 58 +  81 32 19   - 7 40  3                          +   654.574
  7   6 59 +  83 43 13   -10 31 12                          +   668.618
  7   7  0 +  85 56 13   -13 23 30                          +   683.332
  7   7  1 +  88 12  1   -16 17 35                          +   698.645
  7   7  2 +  90 31 22   -19 12  4                          +   714.486
  7   7  3 +  92 55  4   -21 33 36                          +   730.782
  7   7  4 +  95 23 53   -24 11 45                          +   747.456
```

7	7	5	+	97	58	42	-26	46	4	+ 764.432	
7	7	6	+100	40	24	-29	16	6	+ 781.635		
7	7	7	+103	29	52	-31	41	19	+ 798.985		
7	7	8	+106	28	2	-34	1	9	+ 816.408		
7	7	9	+109	35	49	-36	14	58	+ 833.826		
7	7	10	+112	54	9	-38	22	7	+ 851.166		
7	7	11	+116	23	48	-40	21	49	+ 868.356		
7	7	12	+120	5	32	-42	13	19	+ 885.323		
7	7	13	+123	59	47	-43	55	42	+ 902.001		
7	7	14	+128	6	47	-45	28	8	+ 918.322		
7	7	15	+132	26	20	-46	49	40	+ 934.223		
7	7	16	+136	57	47	-47	59	24	+ 949.645		
7	7	17	+141	39	57	-48	56	32	+ 964.531		
7	7	18	+146	31	1	-49	40	19	+ 978.826		
7	7	19	+151	28	43	-50	10	11	+ 992.480		
7	7	20	+156	30	14	-50	25	45	+ 1005.447		
7	7	21	+161	32	31	-50	26	55	+ 1017.682		
7	7	22	+166	32	29	-50	13	47	+ 1029.148		
7	7	23	+171	27	8	-49	46	43	+ 1039.806		
7	7	24	+176	13	52	-49	6	18	+ 1049.626		
7	7	25	-179	9	24	-48	13	17	+ 1058.578		
7	7	26	-174	44	15	-47	8	33	+ 1066.638	TWILIGHT	
7	7	27	-170	31	40	-45	53	4	+ 1073.783	TWILIGHT	
7	7	28	-166	32	5	-44	27	46	+ 1079.995	TWILIGHT	
7	7	29	-162	45	32	-42	53	38	+ 1085.261	TWILIGHT	
7	7	30	-159	11	43	-41	11	34	+ 1089.568	TWILIGHT	
7	7	31	-155	50	3	-39	22	26	+ 1092.910	TWILIGHT	
7	7	32	-152	39	48	-37	26	59	+ 1095.281	TWILIGHT	
7	7	33	-149	40	10	-35	25	58	+ 1096.680	TWILIGHT	
7	7	34	-146	50	14	-33	19	58	+ 1097.110		
7	7	35	-144	9	6	-31	9	35	+ 1096.576		
7	7	36	-141	35	55	-28	55	18	+ 1095.084		
7	7	37	-139	9	48	-26	37	34	+ 1092.646		
7	7	38	-136	49	57	-24	16	47	+ 1089.276		
7	7	39	-134	35	35	-21	53	17	+ 1084.989		
7	7	40	-132	25	59	-19	27	24	+ 1079.805		
7	7	41	-130	20	27	-16	59	23	+ 1073.744		
7	7	42	-128	18	19	-14	29	31	+ 1066.830		
7	7	43	-126	18	59	-11	58	2	+ 1059.091		
7	7	44	-124	21	51	-	25	8	+ 1050.552		
7	7	45	-122	26	20	-	51	2	+ 1041.246		
7	7	46	-120	31	53	-	15	56	+ 1031.204		

```
  7  7 47 -118 37 55  - 1 40  1                              + 1020.462
   7  7 47 38  LONG.  -117 25  2  PASS NO.  351 + 1013.169
  7  7 48 -116 43 55  + 0 56 31                              + 1009.054
  7  7 49 -114 49 18  + 3 33 27                              +  997.020
  7  7 50 -112 53 31  + 6 10 37                              +  984.398
  7  7 51 -110 55 59  + 8 47 47                              +  971.230
  7  7 52 -108 56  5  +11 24 43                              +  957.559
  7  7 53 -106 53 10  +14  1 11                              +  943.429
WHITES 111  7  7 53  4.091  S77.8552   2490.467    NE
BOLDER  95  7  7 53 46.856  S84.3004   2986.893    NE
  7  7 54 -104 46 33  +16 36 54                              +  928.886
  7  7 55 -102 35 29  +19 11 33                              +  913.975
  7  7 56 -100 19 12  +21 44 49                              +  898.747
FTSILL 110  7  7 56 48.419  S61.0249   1561.120    NE
  7  7 57 - 97 56 51  +24 16 18                              +  883.248
  7  7 58 - 95 27 29  +26 45 34                              +  867.531
CPCAN1 107  7  7 58 35.700  W64.3469   1632.884    NE          **
  7  7 59 - 92 50  7  +29 12  7                              +  851.645
ARKANS 109  7  7 59 44.934  S31.6055    965.000    NE
  7  8  0 - 90  3 40  +31 35 23                              +  835.643
UWISCN 102  7  8  0  7.944  S63.4805   1559.826    NE
UILNOS  97  7  8  0 37.669  S48.8865   1172.271    NE
WHITES 111  7  8  0 54.334  E74.8552   2065.790    NE          **
  7  8  1 - 87  7  1  +33 54 43                              +  819.579
2RSTON  99  7  8  1  8.712  S 3.9192    818.933    NE
PORSPG 117  7  8  1 35.326  W53.4632   1243.638    NE          **
FTSILL 110  7  8  1 19.424  E60.8936   1444.860    NE          **
ARKANS 109  7  8  1 29.023  E33.6914    952.336    NE          **
GOLDST 103  7  8  1 39.076  E88.3102   3129.809    NE          **
2RSTON  99  7  8  1 20.042  E 4.1651    816.112    NE          **
  7  8  2 - 83 58 57  +36  9 22                              +  803.504
LANGLY 106  7  8  2 25.877  W38.6891    986.551    NE          **
  7  8  3 - 80 38 16  +38 18 29                              +  787.476
BPOINT 126  7  8  3 59.419  N17.0131    802.957    NE
BELVOR 113  7  8  3 58.698  N14.4608    794.288    NE
CPCAN1 107  7  8  3  0.525  N61.5765   1422.180    NE
PNSTAT  96  7  8  3 46.709  S 8.2898    781.969    NE
BPOINT 126  7  8  3  3.306  W22.9228    845.808    NE          **
BELVOR 113  7  8  3 11.114  W19.7496    827.743    NE          **
ABDEEN 112  7  8  3 33.629  W17.8983    813.531    NE          **
FTMONM 104  7  8  3 56.988  W21.8647    825.092    NE          **
UILNOS  97  7  8  3 52.415  E55.4866   1236.289    NE          **
```

```
BOLDER   95  7  8   3 53.074   E83.5905    2598.081     NE          **
  7  8   4 - 77   3 47   +40 21  6                       +   771.546
PDRSPG 117  7  8   4 24.591   N45.1356    1031.231     NE
ABDEEN 112  7  8   4 15.796   N12.6469     784.332     NE
LANGLY 106  7  8   4 10.666   N30.5657     876.575     NE
FTMONM 104  7  8   4 47.828   N14.8931     782.395     NE
PNSTAT  96  7  8   4 13.468   E11.4527     781.494     NE          **
  7  8   5 - 73 14 22   +42 16  8                       +   755.773
LINCON 105  7  8   5 25.916   N 4.0357     750.676     NE
LINCON 105  7  8   5 11.084   W 7.0110     757.935     NE          **
UWISCN 102  7  8   5 26.575   E71.2144    1731.640     NE          **
  7  8   6 - 69  9  9   +44  2 24                       +   740.212
  7  8   7 - 64 47 34   +45 38 36                       +   724.918
  7  8   8 - 60  9 29   +47  3 20                       +   709.950
  7  8   9 - 55 15 29   +48 15 12                       +   695.362  TWILIGHT
  7  8  10 - 50  6 54   +49 12 50                       +   681.212  TWILIGHT
  7  8  11 - 44 46  0   +49 54 58                       +   667.557  TWILIGHT
  7  8  12 - 39 15 51   +50 20 32                       +   654.451  TWILIGHT
  7  8  13 - 33 40 20   +50 28 50                       +   641.951  TWILIGHT
  7  8  14 - 28  3 43   +50 19 27                       +   630.110  TWILIGHT
  7  8  15 - 22 30 25   +49 52 27                       +   618.982
  7  8  16 - 17  4 29   +49  8 15                       +   608.617
  7  8  17 - 11 49 22   +48  7 39                       +   599.067
HDLBRG 101  7  8 15 40.745   W84.9582    3931.089     SE          **
  7  8  18 -  6 47 40   +46 51 41                       +   590.379
  7  8  19 -  2  1  6   +45 21 36                       +   582.597
  7  8  20 +  2 29 29   +43 38 44                       +   575.765
  7  8  21 +  6 43 54   +41 44 25                       +   569.922
HDLBRG 101  7  8 21 29.348   564.9949    1153.601     SE
  7  8  22 + 10 42 36   +39 39 59                       +   565.102
  7  8  23 + 14 26 22   +37 26 40                       +   561.338
  7  8  24 + 17 56 15   +35  5 37                       +   558.657
  7  8  25 + 21 13 25   +32 37 53                       +   557.081
  7  8  26 + 24 19  8   +30  4 24                       +   556.627
  7  8  27 + 27 14 37   +27 26  3                       +   557.308
  7  8  28 + 30  1  4   +24 43 34                       +   559.129
  7  8  29 + 32 39 38   +21 57 39                       +   562.091
  7  8  30 + 35 11 23   +19  7 56                       +   566.189
  7  8  31 + 37 37 20   +16 17 58                       +   571.410
  7  8  32 + 39 58 24   +13 28 17                       +   577.737
  7  8  33 + 42 15 30   +10 31 21                       +   585.146
  7  8  34 + 44 29 25   + 7 36 35                       +   593.606
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7	8	35	+	46	40	58	+	4	41	25	+	603.081
7	8	36	+	48	50	53	+	1	46	15	+	613.529
7	8	37	+	50	59	54	-	1	8	34	+	624.903
7	8	38	+	53	8	44	-	4	2	40	+	637.151
7	8	39	+	55	18	3	-	6	55	42	+	650.216
7	8	40	+	57	28	34	-	9	47	19	+	664.036
7	8	41	+	59	40	59	-12	37	10		+	678.546
7	8	42	+	61	56	2	-15	24	54		+	693.679
7	8	43	+	64	14	27	-18	10	9		+	709.362
7	8	44	+	66	37	0	-20	52	31		+	725.523
7	8	45	+	69	4	29	-23	31	37		+	742.087
7	8	46	+	71	37	44	-26	7	1		+	758.977
7	8	47	+	74	17	39	-28	38	14		+	776.116
7	8	48	+	77	5	5	-31	4	46		+	793.428
7	8	49	+	80	1	0	-33	26	4		+	810.836
7	8	50	+	83	6	20	-35	41	32		+	828.264
7	8	51	+	86	21	57	-37	50	29		+	845.636
7	8	52	+	89	48	45	-39	52	12		+	862.880
7	8	53	+	93	27	26	-41	45	53		+	879.925
7	8	54	+	97	18	33	-43	30	42		+	896.700
7	8	55	+101		22	24	-45	5	45		+	913.139
7	8	56	+105		38	53	-46	30	9		+	929.178
7	8	57	+110		7	31	-47	42	58		+	944.757
7	8	58	+114		47	12	-48	43	22		+	959.817
7	8	59	+119		36	19	-49	30	35		+	974.302
7	9	0	+124		32	40	-50	4	0		+	988.163
7	9	1	+129		33	35	-50	23	12		+	1001.351
7	9	2	+134		36	4	-50	27	59		+	1013.821
7	9	3	+139		36	58	-50	18	24		+	1025.534
7	9	4	+144		33	16	-49	54	46		+	1036.451
7	9	5	+149		22	17	-49	17	37		+	1046.539
7	9	6	+154		1	43	-48	27	41		+	1055.769
7	9	7	+158		29	55	-47	25	47		+	1064.114 TWILIGHT
7	9	8	+162		45	46	-46	12	53		+	1071.552 TWILIGHT
7	9	9	+166		48	39	-44	49	56		+	1078.062 TWILIGHT
7	9	10	+170		38	27	-43	17	54		+	1083.631 TWILIGHT
7	9	11	+174		15	26	-41	27	44		+	1088.245 TWILIGHT
7	9	12	+177		40	5	-39	50	16		+	1091.897 TWILIGHT
7	9	13	-179		6	53	-37	28	19		+	1094.579 TWILIGHT
7	9	14	-176		4	41	-35	56	37		+	1096.290 TWILIGHT
7	9	15	-173		12	24	-33	51	48		+	1097.032
7	9	16	-170		29	10	-31	42	28		+	1096.807

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  7   9 17 -167 54  5   -29 29  6                              + 1095.624
  7   9 18 -165 26 17   -27 12 12                              + 1093.491
  7   9 19 -163  4 57   -24 52  9                              + 1090.421
  7   9 20 -160 49 18   -22 29 18                              + 1086.430
  7   9 21 -158 38 35   -20  4  0                              + 1081.535
  7   9 22 -156 32  7   -17 36 31                              + 1075.758
  7   9 23 -154 29 13   -15  7  6                              + 1069.120
  7   9 24 -152 29 16   -12 36  1                              + 1061.648
  7   9 25 -150 31 39   -10  3 28                              + 1053.369
  7   9 26 -148 35 48   - 7 29 41                              + 1044.312
  7   9 27 -146 41 10   - 4 54 51                              + 1034.508
  7   9 28 -144 47  9   - 2 19  9                              + 1023.993
   7   9 28 53  LONG.   -143  5 45  PASS NO.   352 + 1014.031
  7   9 29 -142 53 14   + 0 17 13                              + 1012.801
  7   9 30 -140 58 52   + 2 54  2                              + 1000.970
  7   9 31 -139  3 27   + 5 31  8                              +  988.538
  7   9 32 -137  6 27   + 8  8 16                              +  975.546
  7   9 33 -135  7 15   +10 45 15                              +  962.038
  7   9 34 -133  5 11   +13 21 49                              +  948.056
  7   9 35 -130 59 36   +15 57 42                              +  933.645
  7   9 36 -128 49 47   +18 32 36                              +  918.851
  7   9 37 -126 34 57   +21  6 12                              +  903.723
  7   9 38 -124 14 15   +23 38  8                              +  888.309
STNFDU  98  7  9 38 50.900  S63.6398   1633.337    NE
  7   9 39 -121 46 49   +26  7 58                              +  872.659
  7   9 40 -119 11 37   +28 35 12                              +  856.824
NELCAL 121  7  9 40 48.811  S17.0276    877.715    NE
GOLDST 103  7  9 40 51.489  S36.0936   1011.524    NE
  7   9 41 -116 27 39   +30 59 19                              +  840.854
NELCAL 121  7  9 41 40.453  E17.4603    865.226    NE         **
  7   9 42 -113 33 46   +33 19 40                              +  824.805
WHITES 111  7  9 42  9.684  W39.9218   1032.302    NE         **
FTSILL 110  7  9 42 34.733  W63.5948   1535.611    NE         **
ARKANS 109  7  9 42 44.311  W76.3286   2140.482    NE         **
GOLDST 103  7  9 42 54.343  E38.4288    998.714    NE         **
2RSTON  99  7  9 42 35.330  W82.0177   2557.608    NE         **
  7   9 43 -110 28 47   +35 35 33                              +  808.727
STNFDU  98  7  9 43 50.209  E65.3782   1566.302    NE         **
  7   9 44 -107 11 30   +37 46  7                              +  792.676
WHITES 111  7  9 44  7.780  N34.9912    940.167    NE
BOLDER  95  7  9 44 33.674  S10.8228    794.571    NE
BELVOR 113  7  9 44 26.381  W84.6330   2720.648    NE         **
```

```
ABDEEN 112  7  9 44 48.958  W84.1859    2667.422     NE         **
  7  9 45 -103 40 42  +39 50 27                      +   776.707
FTMONM 104  7  9 45 12.297  W84.5846    2689.908     NE         **
UILNOS  97  7  9 45  7.745  W66.0286    1555.475     NE         **
PNSTAT  96  7  9 45 28.818  W79.4999    2266.181     NE         **
BOLDER  95  7  9 45  8.466  E14.4519     795.171     NE         **
  7  9 46 -  99 55 17  +41 47 30                    +   760.875
FTSILL 110  7  9 46 22.974  N54.6243    1189.186     NE
LINCON 105  7  9 46 26.455  W81.8665    2415.532     NE         **
UWISCN 102  7  9 46 41.946  W43.4009     987.162     NE         **
  7  9 47 -  95 54 15  +43 36  6                    +   745.236
  7  9 48 -  91 36 58  +45 14 59                     +   729.846
ARKANS 109  7  9 48 11.326  N64.8200    1428.991     NE
UWISCN 102  7  9 48 25.828  N25.9476     794.492     NE
UILNOS  97  7  9 48 44.718  N48.6946    1024.701     NE
  7  9 49 -  87  3 10  +46 42 45                    +   714.762
2RSTON  99  7  9 49  4.782  N69.5113    1587.200     NE
  7  9 50 -  82 13 15  +47 58  3                    +   700.041   TWILIGHT
CPCAN1 107  7  9 50 19.310  N83.7290    2437.141     NE
PNSTAT  96  7  9 50 51.383  N57.9536    1164.648     NE
  7  9 51 -  77  8 21  +48 59 27                    +   685.739   TWILIGHT
PORSPG 117  7  9 51 18.389  N74.4973    1767.468     NE
BELVOR 113  7  9 50 59.891  N65.5170    1381.869     NE
ABDEEN 112  7  9 51 12.045  N63.8178    1320.399     NE
FTMONM 104  7  9 51 35.404  N62.4897    1270.383     NE
  7  9 52 -  71 50 25  +49 45 39                    +   671.912   TWILIGHT
LINCON 105  7  9 52  3.646  N54.9677    1073.128     NE
  7  9 53 -  66 22 24  +50 15 35                     +   658.618   TWILIGHT
  7  9 54 -  60 47 57  +50 28 22                     +   645.911   TWILIGHT
  7  9 55 -  55 11 16  +50 23 34                     +   633.845   TWILIGHT
  7  9 56 -  49 36 47  +50  1  6                     +   622.476
  7  9 57 -  44  8 38  +49 21 17                     +   611.854
  7  9 58 -  38 50 30  +48 24 51                     +   602.031
  7  9 59 -  33 45 10  +47 12 45                     +   593.055
  7 10  0 -  28 54 37  +45 46 13                     +   584.971
  7 10  1 -  24 19 54  +44  6 32                     +   577.825
  7 10  2 -  20  1 20  +42 [illegible]  4            +   571.655
  7 10  3 -  15 58 38  +40 [illegible]  9            +   566.499
  7 10  4 -  12 11  7  +38 [illegible]  2            +   562.390
  7 10  5 -   8 37 45  +35 42 53                     +   559.355
  7 10  6 -   5 17 25  +33 16 47                     +   557.421
  7 10  7 -   2  8 51  +30 44 43                     +   556.604
```

7	10	8	+	0	49	11	+28	7	33	+	556.919
7	10	9	+	3	37	52	+25	26	3	+	558.375
7	10	10	+	6	18	23	+22	40	58	+	560.972
7	10	11	+	8	51	49	+19	52	54	+	564.709
7	10	12	+	11	19	12	+17	2	27	+	569.574
7	10	13	+	13	41	28	+14	10	9	+	575.551
7	10	14	+	15	59	32	+11	16	28	+	582.620
7	10	15	+	18	14	13	+ 8	21	51	+	590.750
7	10	16	+	20	26	20	+ 5	26	43	+	599.908
7	10	17	+	22	36	38	+ 2	31	29	+	610.053
7	10	18	+	24	45	50	- 0	23	30	+	621.141
7	10	19	+	26	54	41	- 3	17	51	+	633.119
7	10	20	+	29	3	50	- 6	11	14	+	645.933
7	10	21	+	31	14	1	- 9	3	18	+	659.522
7	10	22	+	33	25	55	-11	53	41	+	673.823
7	10	23	+	35	40	16	-14	42	2	+	688.768
7	10	24	+	37	57	47	-17	28	0	+	704.286
7	10	25	+	40	19	14	-20	11	12	+	720.305
7	10	26	+	42	45	26	-22	51	13	+	736.750
7	10	27	+	45	17	10	-25	27	39	+	753.546
7	10	28	+	47	55	21	-28	0	2	+	770.615
7	10	29	+	50	40	50	-30	27	52	+	787.882
7	10	30	+	53	34	34	-32	50	36	+	805.267
7	10	31	+	56	37	28	-35	7	39	+	822.697
7	10	32	+	59	50	28	-37	18	22	+	840.094
7	10	33	+	63	14	24	-39	22	2	+	857.385
7	10	34	+	66	50	5	-41	17	52	+	874.500
7	10	35	+	70	38	5	-43	5	3	+	891.366
7	10	36	+	74	38	46	-44	42	41	+	907.917
7	10	37	+	78	52	12	-46	9	53	+	924.089
7	10	38	+	83	17	55	-47	25	44	+	939.818
7	10	39	+	87	55	2	-48	29	22	+	955.046
7	10	40	+	92	42	2	-49	19	59	+	969.718
7	10	41	+	97	36	53	-49	56	56	+	983.780
7	10	42	+102	37	1	-50	19	44	+	997.185
7	10	43	+107	39	28	-50	28	8	+	1009.885
7	10	44	+112	41	7	-50	22	8	+	1021.841
7	10	45	+117	38	55	-50	1	59	+	1033.013
7	10	46	+122	30	3	-49	28	9	+	1043.366
7	10	47	+127	12	7	-48	41	20	+	1052.871
7	10	48	+131	43	19	-47	42	20	+	1061.499
7	10	49	+136	2	22	-46	32	4	+	1069.227	TWILIGHT

```
  7 10 50 +140   8 33   -45 11 32                          + 1076.034  TWILIGHT
  7 10 51 +144   1 39   -43 41 40                          + 1081.905  TWILIGHT
  7 10 52 +147  41 48   -42  3 26                          + 1086.824  TWILIGHT
  7 10 53 +151   9 29   -40 17 42                          + 1090.784  TWILIGHT
  7 10 54 +154  25 21   -38 25 18                          + 1093.777  TWILIGHT
  7 10 55 +157  30 11   -36 26 57                          + 1095.801  TWILIGHT
  7 10 56 +160  24 52   -34 23 21                          + 1096.854
  7 10 57 +163  10 17   -32 15  5                          + 1096.940
  7 10 58 +165  47 18   -30  2 41                          + 1096.064
  7 10 59 +168  16 50   -27 46 38                          + 1094.237
  7 11  0 +170  39 42   -25 27 20                          + 1091.469
  7 11  1 +172  56 42   -23  5 10                          + 1087.775
  7 11  2 +175   8 33   -20 40 27                          + 1083.173
  7 11  3 +177  16  0   -18 13 30                          + 1077.681
  7 11  4 +179  19 43   -15 44 34                          + 1071.322
SAMOAI 114  7 11  4 33.655  W48.3497   1481.591    NE          **
  7 11  5 -178  39 40   -13 13 54                          + 1064.119
  7 11  6 -176  41 33   -10 41 43                          + 1056.101
  7 11  7 -174  45 20   - 8  8 15                          + 1047.296
  7 11  8 -172  50 28   - 5 33 41                          + 1037.735
  7 11  9 -170  56 23   - 2 58 13                          + 1027.451
SAMOAI 114  7 11  9  6.926  N59.5723   1726.186    NE
  7 11 10 -169   2 31   - 0 22  2                          + 1016.478
   7 11 10  8  LONG.  -168 46 25  PASS NO.  353 + 1014.841
  7 11 11 -167   8 20   + 2 14 39                          + 1004.854
  7 11 12 -165  13 17   + 4 51 40                          +  992.616
  7 11 13 -163  16 46   + 7 28 46                          +  979.806
  7 11 14 -161  18 12   +10  5 46                          +  966.464
BSANDS 100  7 11 14 44.921  556.2488   1521.996    NE
  7 11 15 -159  16 57   +12 42 25                          +  952.635
  7 11 16 -157  12 22   +15 18 27                          +  938.361
  7 11 17 -155   3 44   +17 53 36                          +  923.690
  7 11 18 -152  50 17   +20 27 31                          +  908.668
BSANDS 100  7 11 18 36.952  E49.7192   1287.877    NE          **
  7 11 19 -150  31 12   +22 59 52                          +  893.344
  7 11 20 -148   5 36   +25 30 13                          +  877.767
  7 11 21 -145  32 32   +27 59  7                          +  861.987
  7 11 22 -142  50 57   +30 23  2                          +  846.057
  7 11 23 -139  59 45   +32 44 22                          +  830.027
WHITES 111  7 11 23 24.931  188.8581   3220.623    NE          **
  7 11 24 -136  57 46   +35  1 25                          +  813.952
GOLDST 103  7 11 24  0.611  W74.9305   2049.560    NE          **
```

```
  7 11 25 -133 43 48  +37 13 23                          +  797.886
STNFDU  98  7 11 25  5.538  W57.5828   1322.479    NE        **
  7 11 26 -130 16 38  +39 19 22                          +  781.883
BOLDER  95  7 11 26 23.734  W79.1720   2253.462    NE        **
  7 11 27 -126 35  7  +41 18 20                          +  765.998
UWISCN 102  7 11 27 57.275  W87.4320   2913.189    NE        **
  7 11 28 -122 38 14  +43  9 11                          +  750.288
STNFDU  98  7 11 28  6.875  N45.8743   1020.497    NE
  7 11 29 -118 25 14  +44 50 39                          +  734.808
GOLDST 103  7 11 29 21.238  N63.2454   1378.690    NE
  7 11 30 -113 55 45  +46 21 23                          +  719.615
  7 11 31 -109  9 59  +47 39 59                          +  704.767
WHITES 111  7 11 31 29.222  N75.0382   1830.383    NE
BOLDER  95  7 11 31 47.041  N59.1300   1200.675    NE
  7 11 32 -104  8 51  +48 45  4                         +  690.318  TWILIGHT
  7 11 33 -  98 54  7  +49 35 17                         +  676.326  TWILIGHT
FTSILL 110  7 11 33  5.421  N76.5314   1870.969    NE
  7 11 34 -  93 28 27  +50  9 29                         +  662.849  TWILIGHT
ARKANS 109  7 11 34 29.240  N77.6012   1897.420    NE
UWISCN 102  7 11 34 41.002  N56.2008   1072.765    NE
UILNOS  97  7 11 34 56.555  N66.8664   1366.697    NE
  7 11 35 -  87 55 21  +50 26 45                         +  649.940  TWILIGHT
2RSTON  99  7 11 35 13.323  N78.6447   1944.587    SE
  7 11 36 -  82 18 55  +50 26 30                         +  637.656  TWILIGHT
BELVOR 113  7 11 36 55.516  N70.6661   1472.355    SE
CPCAN1 107  7 11 36 18.170  N87.4375   2638.916    SE
PNSTAT  96  7 11 36 47.524  N64.9911   1262.661    SE
  7 11 37 -  76 43 31  +50  8 35                         +  626.051
PORSPG 117  7 11 37 12.881  N77.5781   1824.779    SE
ABDEEN 112  7 11 37  6.866  N68.5457   1381.855    SE
LINCON 105  7 11 37 56.840  N56.3172   1017.356    SE
FTMONM 104  7 11 37 29.134  N65.8941   1279.110    SE
  7 11 38 -  71 13 26  +49 33 12                         +  615.177
  7 11 39 -  65 52 27  +48 40 59                         +  605.085
  7 11 40 -  60 43 39  +47 32 50                         +  595.826
  7 11 41 -  55 49 11  +46  9 56                         +  587.445
  7 11 42 -  51 10 20  +44 33 32                         +  579.987
  7 11 43 -  46 47 37  +42 45  1                         +  573.496
LINCON 105  7 11 43  4.039  E84.2571   2199.610    SE        **
  7 11 44 -  42 40 53  +40 45 41                         +  568.006
  7 11 45 -  38 49 32  +38 36 50                         +  563.554
  7 11 46 -  35 12 37  +36 19 41                         +  560.169
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  7 11 47 - 31 49  1   +33 55 17                          +  557.877
  7 11 48 - 28 37 31   +31 24 41                          +  556.698
  7 11 49 - 25 36 53   +28 48 45                          +  556.648
  7 11 50 - 22 45 52   +26  8 18                          +  557.738
  7 11 51 - 20  3 20   +23 24  5                          +  559.970
  7 11 52 - 17 28  9   +20 36 43                          +  563.343
  7 11 53 - 14 59 17   +17 46 49                          +  567.850
  7 11 54 - 12 35 46   +14 54 55                          +  573.476
  7 11 55 - 10 16 41   +12  1 32                          +  580.201
  7 11 56 -  8  1 10   + 9  7  5                          +  587.998
  7 11 57 -  5 48 27   + 6 12  2                          +  596.834
  7 11 58 -  3 37 43   + 3 16 45                          +  606.672
  7 11 59 -  1 28 16   + 0 21 38                          +  617.467
SANANA 116  7 11 59 40.924  S17.5997    653.133    SE
SANANA 116  7 11 59  7.306  W13.4462    634.696    SE          **
  7 12  0 +  0 40 38   - 2 32 58                          +  629.171
  7 12  1 +  2 49 40   - 5 26 40                          +  641.728
  7 12  2 +  4 59 34   - 8 19  9                          +  655.080
  7 12  3 +  7 10 59   -11 10  2                          +  669.164
  7 12  4 +  9 24 40   -13 58 59                          +  683.913
  7 12  5 + 11 41 21   -16 45 39                          +  699.259
  7 12  6 + 14  1 46   -19 29 38                          +  715.129
  7 12  7 + 16 26 42   -22 10 34                          +  731.448
  7 12  8 + 18 57  0   -24 48  0                          +  748.143
JOBURG 118  7 12  8 28.536  W52.2304   1138.908    SE          **
  7 12  9 + 21 33 30   -27 21 31                          +  765.134
  7 12 10 + 24 17  6   -29 50 36                          +  782.347
  7 12 11 + 27  8 41   -32 14 44                          +  799.703
JOBURG 118  7 12 11 22.024  S49.5389   1156.056    SE
  7 12 12 + 30  9 14   -34 33 21                          +  817.126
  7 12 13 + 33 19 38   -36 45 46                          +  834.542
  7 12 14 + 36 40 48   -38 51 20                          +  851.874
  7 12 15 + 40 13 29   -40 49 16                          +  869.051
  7 12 16 + 43 58 24   -42 38 46                          +  886.002
  7 12 17 + 47 55 56   -44 18 56                          +  902.659
  7 12 18 + 52  6 14   -45 48 53                          +  918.955
  7 12 19 + 56 29  0   -47  7 43                          +  934.830
  7 12 20 + 61  3 26   -48 14 32                          +  950.221
  7 12 21 + 65 48 13   -49  8 30                          +  965.073
  7 12 22 + 70 41 24   -49 48 57                          +  979.332
  7 12 23 + 75 40 32   -50 15 21                          +  992.948
  7 12 24 + 80 42 46   -50 27 23                          + 1005.875
```

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  7 12 25 + 85 45  0  -50 24 59                          + 1018.070
  7 12 26 + 90 44  7  -50  8 21                          + 1029.492
  7 12 27 + 95 37 13  -49 37 53                          + 1040.108
  7 12 28 +100 21 49  -48 54 13                          + 1049.885
  7 12 29 +104 55 55  -47 58 10                          + 1058.793
  7 12 30 +109 18  8  -46 50 38                          + 1066.809  TWILIGHT
  7 12 31 +113 27 37  -45 32 33                          + 1073.911  TWILIGHT
  7 12 32 +117 24  0  -44  4 55                          + 1080.081  TWILIGHT
  7 12 33 +121  7 23  -42 28 41                          + 1085.305  TWILIGHT
  7 12 34 +124 38  9  -40 44 44                          + 1089.573  TWILIGHT
  7 12 35 +127 56 54  -38 53 54                          + 1092.876  TWILIGHT
  7 12 36 +131  4 25  -36 56 58                          + 1095.210  TWILIGHT
  7 12 37 +134  1 34  -34 54 37                          + 1096.575  TWILIGHT
OOMERA 119  7 12 37 58.907  511.5299   1115.995    NE
  7 12 38 +136 49 12  -32 47 27                          + 1096.971
OOMERA 119  7 12 38 46.245  E12.0983   1117.616    NE         **
  7 12 39 +139 28 14  -30 36  2                          + 1096.406
  7 12 40 +141 59 33  -28 20 51                          + 1094.885
  7 12 41 +144 24  0  -26  2 20                          + 1092.420
  7 12 42 +146 42 22  -23 40 51                          + 1089.025
  7 12 43 +148 55 25  -21 16 46                          + 1084.716
  7 12 44 +151  3 54  -18 50 21                          + 1079.511
  7 12 45 +153  8 29  -16 21 54                          + 1073.433
  7 12 46 +155  9 47  -13 51 40                          + 1066.503
  7 12 47 +157  8 27  -11 19 52                          + 1058.750
  7 12 48 +159  5  4  - 8 46 44                          + 1050.199
  7 12 49 +161  0 12  - 6 12 27                          + 1040.883
  7 12 50 +162 54 25  - 3 37 13                          + 1030.833
  7 12 51 +164 48 15  - 1  1 14                          + 1020.084
   7 12 51 23  LONG.  +165 32 52  PASS NO.  354 + 1015.616
  7 12 52 +166 42 16  + 1 35 19                          + 1008.671
  7 12 53 +168 37  1  + 4 12 14                          +  996.632
  7 12 54 +170 33  4  + 6 49 18                          +  984.008
  7 12 55 +172 31  2  + 9 26 18                          +  970.837
  7 12 56 +174 31 31  +12  3  1                          +  957.165
  7 12 57 +176 35  9  +14 39 12                          +  943.034
  7 12 58 +178 42 39  +17 14 33                          +  928.490
  7 12 59 -179  5 14  +19 48 46                          +  913.579
BSANDS 100  7 12 59 52.117  W72.9564   2104.555    NE         **
  7 13  0 -176 47 42  +22 21 29                          +  898.350
  7 13  1 -174 23 53  +24 52 21                          +  882.852
  7 13  2 -171 52 51  +27 20 52                          +  867.134
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  7 13  3 -169 13 35  +29 46 33                          +  851.248
  7 13  4 -166 25  0  +32  8 49                          +  835.245
  7 13  5 -163 25 56  +34 26 59                          +  819.179
  7 13  6 -160 15 12  +36 40 16                          +  803.103
BSANDS 100  7 13  6  8.220  N73.0972   1924.802    NE
  7 13  7 -156 51 34  +38 47 50                          +  787.072
  7 13  8 -153 13 54  +40 48 40                          +  771.141
  7 13  9 -149 21  7  +42 41 40                          +  755.366
  7 13 10 -145 12 22  +44 25 38                          +  739.802
  7 13 11 -140 47 12  +45 59 13                          +  724.506
  7 13 12 -136  5 38  +47 21  2                          +  709.536
  7 13 13 -131  8 24  +48 29 42                          +  694.947  TWILIGHT
  7 13 14 -125 57  1  +49 23 51                          +  680.797  TWILIGHT
STNFDU  98  7 13 14 42.257  N71.5381   1597.387    NE
  7 13 15 -120 33 58  +50  2 16                          +  667.142  TWILIGHT
GOLDST 103  7 13 15 40.347  N76.8911   1855.126    NE
  7 13 16 -115  2 29  +50 23 57                          +  654.038  TWILIGHT
  7 13 17 -109 26 35  +50 28 16                          +  641.541  TWILIGHT
WHITES 111  7 13 17 28.761  N80.3644   2037.911    SE
BOLDER  95  7 13 17 44.808  N67.1988   1343.174    SE
  7 13 18 -103 50 34  +50 14 54                          +  629.705
FTSILL 110  7 13 18 58.801  N78.2302   1855.109    SE
  7 13 19 -  98 18 47  +49 43 59                         +  618.584
  7 13 20 -  92 55 11  +48 56  3                         +  608.229
ARKANS 109  7 13 20 24.391  N75.7975   1677.873    SE
UWISCN 102  7 13 20 36.978  N47.8505    853.945    SE
UILNOS  97  7 13 20 53.869  N60.7453   1092.425    SE
  7 13 21 -  87 43  3  +47 51 56                         +  598.690
2RSTON  99  7 13 21 12.285  N74.8783   1612.104    SE
  7 13 22 -  82 44 45  +46 32 44                         +  590.017
CPCAN1 107  7 13 22 26.710  N82.9631   2120.453    SE
  7 13 23 -  78  1 49  +44 59 43                         +  582.253
BPOINT 126  7 13 23 12.256  N54.2587    924.618    SE
PORSPG 117  7 13 23 33.267  N64.8501   1169.656    SE
BELVOR 113  7 13 23 11.658  N52.9530    901.993    SE
ABDEEN 112  7 13 23 25.810  N46.1271    800.997    SE
LANGLY 106  7 13 23 21.546  N59.1728   1022.416    SE
FTMONM 104  7 13 23 53.660  N34.0356    682.505    SE
PNSTAT  96  7 13 23  1.956  N41.5466    753.136    SE
  7 13 24 -  73 34 57  +43 14 13                         +  575.442
LINCON 105  7 13 24 29.318  S 3.9039    573.686    SE
LINCON 105  7 13 24 19.657  W 6.1256    576.436    SE        **
```

```
UWISCN 102  7 13 24   4.887  E73.7184    1507.285     SE          **
  7 13 25 - 69 24  9  +41 17 34                        +   569.622
ABDEEN 112  7 13 25 51.860  E61.9253    1065.684     SE          **
FTMONM 104  7 13 25 29.818  E48.5087     815.432     SE          **
UILNOS  97  7 13 25 34.144  E81.3245    1949.699     SE          **
PNSTAT  96  7 13 25 14.225  E59.2081    1004.604     SE          **
  7 13 26 - 65 28 55  +39 11  5                        +   564.829
BELVOR 113  7 13 26 13.036  E68.4271    1262.210     SE          **
  7 13 27 - 61 48 22  +36 55 59                        +   561.096
PDRSPG 117  7 13 27 42.602  E76.6773    1629.848     SE          **
2RSTON  99  7 13 27 56.856  E89.9222    2719.920     SE          **
  7 13 28 - 58 21 26  +34 33 22                        +   558.448
  7 13 29 - 55  6 55  +32  4 17                        +   556.909
  7 13 30 - 52  3 35  +29 29 39                        +   556.495
  7 13 31 - 49 10 11  +26 50 18                        +   557.218
  7 13 32 - 46 25 33  +24  6 59                        +   559.084
  7 13 33 - 43 48 33  +21 20 22                        +   562.093
  7 13 34 - 41 18  8  +18 31  3                        +   566.240
  7 13 35 - 38 53 18  +15 39 37                        +   571.512
  7 13 36 - 36 33  8  +12 46 32                        +   577.890
  7 13 37 - 34 16 46  + 9 52 18                        +   585.350
  7 13 38 - 32  3 22  + 6 57 20                        +   593.861
  7 13 39 - 29 52 10  + 4  2  2                        +   603.387
  7 13 40 - 27 42 25  + 1  6 49                        +   613.885
  7 13 41 - 25 33 25  - 1 47 59                        +   625.308
  7 13 42 - 23 24 27  - 4 42  0                        +   637.602
  7 13 43 - 21 14 49  - 7 34 52                        +   650.710
  7 13 44 - 19  3 49  -10 26 14                        +   664.571
  7 13 45 - 16 50 45  -13 15 46                        +   679.119
  7 13 46 - 14 34 52  -16  3  6                        +   694.285
  7 13 47 - 12 15 26  -18 47 51                        +   709.998
  7 13 48 -  9 51 41  -21 29 39                        +   726.184
  7 13 49 -  7 22 47  -24  8  4                        +   742.769
  7 13 50 -  4 47 55  -26 42 41                        +   759.676
  7 13 51 -  2  6 10  -29 13  0                        +   776.827
  7 13 52 +  0 43 22  -31 38 30                        +   794.146
  7 13 53 +  3 41 36  -33 58 36                        +   811.556
  7 13 54 +  6 49 28  -36 12 43                        +   828.981
  7 13 55 + 10  7 52  -38 20  8                        +   846.347
  7 13 56 + 13 37 39  -40 20  7                        +   863.580
  7 13 57 + 17 19 29  -42 11 52                        +   880.609
  7 13 58 + 21 13 53  -43 54 31                        +   897.365
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7	13	59	+	25	21	3	-45	27	10	+ 913.781	
7	14	0	+	29	40	47	-46	48	55	+ 929.794	
7	14	1	+	34	12	28	-47	58	52	+ 945.342	
7	14	2	+	38	54	53	-48	56	9	+ 960.369	
7	14	3	+	43	46	14	-49	40	5	+ 974.820	
7	14	4	+	48	44	13	-50	10	4	+ 988.643	
7	14	5	+	53	46	2	-50	25	44	+ 1001.792	
7	14	6	+	58	48	39	-50	26	57	+ 1014.221	
7	14	7	+	63	48	54	-50	13	50	+ 1025.892	
7	14	8	+	68	43	50	-49	46	46	+ 1036.766	
7	14	9	+	73	30	49	-49	6	21	+ 1046.811	
7	14	10	+	78	7	45	-48	13	18	+ 1055.997	
7	14	11	+	82	33	6	-47	8	32	+ 1064.299	TWILIGHT
7	14	12	+	86	45	50	-45	52	59	+ 1071.693	TWILIGHT
7	14	13	+	90	45	32	-44	27	38	+ 1078.161	TWILIGHT
7	14	14	+	94	32	10	-42	53	27	+ 1083.689	TWILIGHT
7	14	15	+	98	6	3	-41	11	20	+ 1088.262	TWILIGHT
7	14	16	+101	27	45		-39	22	8	+ 1091.875	TWILIGHT
7	14	17	+104	38	1		-37	26	39	+ 1094.520	TWILIGHT
7	14	18	+107	37	40		-35	25	35	+ 1096.196	TWILIGHT
7	14	19	+110	27	35		-33	19	33	+ 1096.904	
7	14	20	+113	8	41		-31	9	9	+ 1096.648	
7	14	21	+115	41	51		-28	54	52	+ 1095.434	
7	14	22	+118	7	55		-26	37	9	+ 1093.274	
7	14	23	+120	27	43		-24	16	23	+ 1090.178	
7	14	24	+122	42	1		-21	52	55	+ 1086.165	
7	14	25	+124	51	34		-19	27	4	+ 1081.249	
7	14	26	+126	57	2		-16	59	7	+ 1075.453	
7	14	27	+128	59	5		-14	29	20	+ 1068.799	
7	14	28	+130	58	20		-11	57	55	+ 1061.312	
7	14	29	+132	55	23		- 9	25	7	+ 1053.020	
7	14	30	+134	50	49		- 6	51	8	+ 1043.953	
7	14	31	+136	45	11		- 4	16	9	+ 1034.140	
7	14	32	+138	39	2		- 1	40	22	+ 1023.618	
7	14	32	38	LONG.			+139	52	9	PASS NO. 355 + 1016.428	
7	14	33	+140	32	56		+ 0	56	2	+ 1012.420	
7	14	34	+142	27	25		+ 3	32	50	+ 1000.584	
7	14	35	+144	23	4		+ 6	9	50	+ 988.149	
7	14	36	+146	20	27		+ 8	46	50	+ 975.155	
7	14	37	+148	20	12		+11	23	37	+ 961.644	
7	14	38	+150	22	56		+13	59	54	+ 947.661	
7	14	39	+152	29	22		+16	35	27	+ 933.249	

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  7 14 40 +154 40 12  +19  9 56                          +  918.455
  7 14 41 +156 56 14  +21 43  2                          +  903.327
  7 14 42 +159 18 19  +24 14 21                          +  887.913
  7 14 43 +161 47 23  +26 43 28                          +  872.262
  7 14 44 +164 24 24  +29  9 53                          +  856.426
  7 14 45 +167 10 28  +31 33  1                          +  840.456
  7 14 46 +170  6 42  +33 52 15                          +  824.404
  7 14 47 +173 14 17  +36  6 49                          +  808.325
  7 14 48 +176 34 26  +38 15 54                          +  792.272
  7 14 49 -179 51 39  +40 18 31                          +  776.301
  7 14 50 -176  2 54  +42 13 35                          +  760.467
  7 14 51 -171 58 22  +43 59 57                          +  744.825
  7 14 52 -167 37 31  +45 36 18                          +  729.433
  7 14 53 -163  0 12  +47  1 15                          +  714.348
BSANDS 100  7 14 53 39.653  N89.9876   3072.376    NE
  7 14 54 -158  6 57  +48 13 24                          +  699.624  TWILIGHT
  7 14 55 -152 59  6  +49 11 23                          +  685.321  TWILIGHT
  7 14 56 -147 38 51  +49 53 56                          +  671.495  TWILIGHT
  7 14 57 -142  9 17  +50 20  0                          +  658.202  TWILIGHT
  7 14 58 -136 34 11  +50 28 50                          +  645.497  TWILIGHT
  7 14 59 -130 57 51  +50 20  2                          +  633.437  TWILIGHT
  7 15  0 -125 24 39  +49 53 38                          +  622.073
STNFDU  98  7 15  0 35.575  N72.4307   1529.126    SE
  7 15  1 -119 58 40  +49 10  2                          +  611.460
GOLDST 103  7 15  1 35.251  N75.2158   1646.663    SE
  7 15  2 -114 43 21  +48 10  0                          +  601.648
  7 15  3 -109 41 20  +46 54 36                          +  592.686
WHITES 111  7 15  3 36.458  N73.8876   1541.878    SE
BOLDER  95  7 15  3 55.553  N49.7440    855.385    SE
  7 15  4 -104 54 22  +45 25  3                         +  584.619
  7 15  5 -100 23 22  +43 42 40                          +  577.493
FTSILL 110  7 15  5 27.344  N62.9983   1109.494    SE
LINCON 105  7 15  5 35.213  W85.4997   2311.422    SE        **
UWISCN 102  7 15  5 20.484  W57.2069    972.560    SE        **
  7 15  6 - 96  8 27  +41 48 48                          +  571.346
FTMONM 104  7 15  6 45.354  W78.8209   1778.832    SE        **
UILNOS  97  7 15  6 49.721  W37.5886    698.763    SE        **
PNSTAT  96  7 15  6 29.822  W74.5674   1536.343    SE        **
BOLDER  95  7 15  6 49.082  E67.6059   1235.908    SE        **
  7 15  7 - 92  9 16  +39 44 45                          +  566.216
ARKANS 109  7 15  7 21.670  N40.8639    725.066    SE
UWISCN 102  7 15  7 39.221  S46.9794    789.926    SE
```

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BELVOR 113  7 15  7 28.571  W70.0229   1323.056    SE        **
ABDEEN 112  7 15  7  7.395  W74.1018   1507.210    SE        **
  7 15  8 - 88 25  1  +37 31 46                     +  562.137
2RSTON  99  7 15  8 29.339  N20.2375    594.154    SE
UILNOS  97  7 15  8  2.972  S30.5477    643.281    SE
PDRSPG 117  7 15  8 58.137  W62.1175   1059.993    SE        **
  7 15  9 - 84 54 41  +35 11  1                    +  559.135
WHITES 111  7 15  9 36.184  E86.3993   2355.049    SE        **
FTSILL 110  7 15  9 12.866  E73.5747   1466.480    SE        **
ARKANS 109  7 15  9  4.029  E48.5334    804.537    SE        **
2RSTON  99  7 15  9 12.433  E23.7968    605.851    SE        **
  7 15 10 - 81 37  4  +32 43 31                    +  557.237
CPCAN1 107  7 15 10 19.175  N39.2185    700.432    SE
  7 15 11 - 78 30 57  +30 10 15                    +  556.459
BELVOR 113  7 15 11 27.792  S68.7103   1257.302    SE
ABDEEN 112  7 15 11 49.648  S73.1168   1439.520    SE
PNSTAT  96  7 15 11 12.878  S72.4695   1408.775    SE
CPCAN1 107  7 15 11 44.230  E39.9669    706.852    SE        **
  7 15 12 - 75 35  6  +27 32  2                    +  556.816
PDRSPG 117  7 15 12  1.224  S62.2184   1058.027    SE
FTMONM 104  7 15 12 33.133  S78.4980   1733.371    SE
  7 15 13 - 72 48 17  +24 49 40                    +  558.316
LINCON 105  7 15 13 29.225  S85.5239   2273.882    SE
  7 15 14 - 70  9 24  +22  3 50                    +  560.960
  7 15 15 - 67 37 22  +19 15  9                    +  564.745
PANTIG 120  7 15 15 44.295  W40.2269    723.686    SE        **
  7 15 16 - 65 11 10  +16 24 12                    +  569.660
  7 15 17 - 62 49 51  +13 31 29                    +  575.689
PANTIG 120  7 15 17 27.251  S47.1351    813.028    SE
  7 15 18 - 60 32 33  +10 37 28                    +  582.808
  7 15 19 - 58 18 26  + 7 42 38                    +  590.991
  7 15 20 - 56  6 43  + 4 47 21                    +  600.200
  7 15 21 - 53 56 39  + 1 52  2                    +  610.396
  7 15 22 - 51 47 29  - 1  2 57                    +  621.532
  7 15 23 - 49 38 32  - 3 57 14                    +  633.557
  7 15 24 - 47 29  7  - 6 50 28                    +  646.416
  7 15 25 - 45 18 30  - 9 42 18                    +  660.046
  7 15 26 - 43  6  0  -12 32 23                    +  674.386
  7 15 27 - 40 50 52  -15 20 21                    +  689.365
  7 15 28 - 38 32 22  -18  5 51                    +  704.914
  7 15 29 - 36  9 46  -20 48 30                    +  720.960
  7 15 30 - 33 42 13  -23 27 52                    +  737.428
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7	15	31	-	31	8	54	-26	3	33	+	754.241	
7	15	32	-	28	28	56	-28	35	3	+	771.324	
7	15	33	-	25	41	26	-31	1	52	+	788.599	
7	15	34	-	22	45	27	-33	23	28	+	805.988	
7	15	35	-	19	40	3	-35	39	12	+	823.416	
7	15	36	-	16	24	20	-37	48	26	+	840.808	
7	15	37	-	12	57	27	-39	50	25	+	858.090	
7	15	38	-	9	18	39	-41	44	22	+	875.190	
7	15	39	-	5	27	24	-43	29	26	+	892.038	
7	15	40	-	1	23	24	-45	4	44	+	908.567	
7	15	41	+	2	53	18	-46	29	21	+	924.713	
7	15	42	+	7	22	8	-47	42	23	+	940.413	
7	15	43	+	12	2	4	-48	42	57	+	955.609	
7	15	44	+	16	51	28	-49	30	19	+	970.246	
7	15	45	+	21	48	6	-50	3	52	+	984.272	
7	15	46	+	26	49	20	-50	23	9	+	997.637	
7	15	47	+	31	52	6	-50	28	0	+	1010.298	
7	15	48	+	36	53	19	-50	18	27	+	1022.211	
7	15	49	+	41	49	54	-49	54	50	+	1033.341	
7	15	50	+	46	39	10	-49	17	41	+	1043.651	
7	15	51	+	51	18	51	-48	27	42	+	1053.112	
7	15	52	+	55	47	14	-47	25	46	+	1061.697	TWILIGHT
7	15	53	+	60	3	14	-46	12	49	+	1069.381	TWILIGHT
7	15	54	+	64	6	15	-44	49	49	+	1076.146	TWILIGHT
7	15	55	+	67	56	9	-43	17	43	+	1081.975	TWILIGHT
7	15	56	+	71	33	12	-41	37	29	+	1086.854	TWILIGHT
7	15	57	+	74	57	54	-39	49	58	+	1090.775	TWILIGHT
7	15	58	+	78	10	57	-37	55	59	+	1093.730	TWILIGHT
7	15	59	+	81	13	10	-35	56	14	+	1095.717	TWILIGHT
7	16	0	+	84	5	26	-33	51	23	+	1096.736	
7	16	1	+	86	48	39	-31	42	2	+	1096.790	
7	16	2	+	89	23	42	-29	28	40	+	1095.884	
7	16	3	+	91	51	27	-27	11	46	+	1094.029	
7	16	4	+	94	12	44	-24	51	44	+	1091.235	
7	16	5	+	96	28	21	-22	28	55	+	1087.517	
7	16	6	+	98	39	0	-20	3	39	+	1082.894	
7	16	7	+100	45	24		-17	33	13	+	1077.382	
7	16	8	+102	48	13		-15		52	+	1071.006	
7	16	9	+104	48	6		-12	33	52	+	1063.789	
7	16	10	+106	45	38		-10	3	25	+	1055.758	
7	16	11	+108	41	23		- 7	29	44	+	1046.942	
7	16	12	+110	35	56		- 4	55	0	+	1037.371	

```
  7 16 13 +112 29 51   - 2 19 26                              + 1027.079
   7 16 13 53  LONG.   +114 11 25  PASS NO.   356 + 1017.278
  7 16 14 +114 23 39   + 0 16 47                              + 1016.100
  7 16 15 +116 17 54   + 2 53 28                              + 1004.471
  7 16 16 +118 13 11   + 5 30 24                              +  992.229
  7 16 17 +120 10  2   + 8  7 23                              +  979.416
  7 16 18 +122  9  6   +10 44 12                              +  966.072
  7 16 19 +124 10 59   +13 20 36                              +  952.241
  7 16 20 +126 16 23   +15 56 19                              +  937.967
  7 16 21 +128 25 59   +18 31  3                              +  923.294
  7 16 22 +130 40 35   +21  4 29                              +  908.272
  7 16 23 +133  1  0   +23 36 15                              +  892.947
  7 16 24 +135 28 10   +26  5 55                              +  877.369
TOKAWA 108  7 16 24 44.252  S46.9813   1191.610     NE
  7 16 25 +138  3  1   +28 33  1                              +  861.589
  7 16 26 +140 46 37   +30 57  1                              +  845.657
  7 16 27 +143 40  5   +33 17 15                              +  829.626
TOKAWA 108  7 16 27 40.583  E48.2894   1152.945     NE          **
  7 16 28 +146 44 37   +35 33  3                              +  813.550
  7 16 29 +150  1 23   +37 43 34                              +  797.482
  7 16 30 +153 31 36   +39 47 53                              +  781.476
  7 16 31 +157 16 24   +41 44 58                              +  765.589
  7 16 32 +161 16 45   +43 33 38                              +  749.876
  7 16 33 +165 33 19   +45 12 39                              +  734.394
  7 16 34 +170  6 21   +46 40 37                              +  719.199
  7 16 35 +174 55 31   +47 56 10                              +  704.348
  7 16 36 +179 59 41   +48 57 54                              +  689.898  TWILIGHT
  7 16 37 -174 43  4   +49 44 32                              +  675.907  TWILIGHT
  7 16 38 -169 15 38   +50 14 55                              +  662.430  TWILIGHT
  7 16 39 -163 41 39   +50 28 14                              +  649.524  TWILIGHT
  7 16 40 -158  5 18   +50 24  0                              +  637.244  TWILIGHT
  7 16 41 -152 30 57   +50  2  7                              +  625.644
  7 16 42 -147  2 48   +49 22 54                              +  614.778
  7 16 43 -141 44 30   +48 27  3                              +  604.697
  7 16 44 -136 38 54   +47 15 31                              +  595.450
  7 16 45 -131 47 59   +45 49 31                              +  587.086
  7 16 46 -127 12 49   +44 10 20                              +  579.648
  7 16 47 -122 53 47   +42 19 19                              +  573.178
STNFDU  98  7 16 47 10.524  N44.8869    776.692     SE
  7 16 48 -118 50 37   +40 17 48                              +  567.713
NELCAL 121  7 16 48 28.863  N57.1696    956.589     SE
GOLDST 103  7 16 48 30.841  N39.7880    714.640     SE
```

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UILNOS  97  7 16 48  5.215  W89.7476   2722.578     SE         **
BOLDER  95  7 16 48  4.597  W69.5948   1309.343     SE         **
  7 16 49 -115  2 36  +38  7  2                      +   563.290
STNFDU  98  7 16 49 18.034  E56.7462    943.039     SE         **
  7 16 50 -111 28 47  +35 48 12                      +   559.937
WHITES 111  7 16 50 51.761  W18.4859    585.657     SE         **
FTSILL 110  7 16 50 28.463  W67.7511   1228.231      SE         **
ARKANS 109  7 16 50 19.564  W81.4245   1939.060      SE         **
GOLDST 103  7 16 50 10.192  E47.7553    793.607      SE         **
2RSTON  99  7 16 50 27.969  W85.5115   2274.729      SE         **
  7 16 51 -108  8  0  +33 22 22                      +   557.680
WHITES 111  7 16 51 26.059  S17.3405    581.293      SE
BOLDER  95  7 16 51 54.795  S66.7698   1187.277      SE
  7 16 52 -104 59  1  +30 50 30                      +   556.540
CPCAN1 107  7 16 52 59.766  W85.3024   2249.945      SE         **
  7 16 53 -102  0 36  +28 13 29                      +   556.532
  7 16 54 - 99 11 34  +25 32  8                      +   557.665
FTSILL 110  7 16 54 17.137  S69.0675   1273.683      SE
  7 16 55 - 96 30 43  +22 47  7                      +   559.943
  7 16 56 - 93 57  0  +19 59  6                      +   563.365
  7 16 57 - 91 29 21  +17  8 40                      +   567.921
ARKANS 109  7 16 57 17.917  S84.7776   2231.198      SE
  7 16 58 - 89  6 51  +14 16 21                      +   573.598
  7 16 59 - 86 48 34  +11 22 36                      +   580.375
2RSTON  99  7 16 59  3.612  S89.8468   2760.223      SE
  7 17  0 - 84 33 41   + 8 27 55                     +   588.223
  7 17  1 - 82 21 24   + 5 32 41                     +   597.112
  7 17  2 - 80 10 56   + 2 37 18                     +   607.000
QUITOE 125  7 17  2 44.376  N12.1458    624.106      SE
  7 17  3 - 78  1 35   - 0 17 50                     +   617.845
QUITOE 125  7 17  3  6.520  E 8.8846    622.329      SE         **
  7 17  4 - 75 52 38   - 3 12 22                     +   629.596
  7 17  5 - 73 43 21   - 6  5 57                     +   642.199
  7 17  6 - 71 33  5   - 8 58 13                     +   655.593
LIMAPU 124  7 17  6 59.046  E56.9118   1112.808      SE         **
  7 17  7 - 69 21  5  -11 48 50                      +   669.717
  7 17  8 - 67  6 39  -14 37 26                      +   684.502
  7 17  9 - 64 49  4  -17 23 39                      +   699.880
  7 17 10 - 62 27 32  -20  7  6                      +   715.778
  7 17 11 - 60  1 17  -22 47 24                      +   732.121
  7 17 12 - 57 29 29  -25 24  7                      +   748.834
  7 17 13 - 54 51 15  -27 56 46                      +   765.841
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7	17	14	-	52	5	42	-30	24	53	+	783.063	
7	17	15	-	49	11	54	-32	47	55	+	800.424	
7	17	16	-	46	8	56	-35	5	15	+	817.848	
7	17	17	-	42	55	51	-37	16	15	+	835.259	
7	17	18	-	39	31	49	-39	20	11	+	852.582	
7	17	19	-	35	56	2	-41	16	17	+	869.746	
7	17	20	-	32	7	54	-43	3	43	+	886.680	
7	17	21	-	28	7	3	-44	41	37	+	903.316	
7	17	22	-	23	53	28	-46	9	2	+	919.588	
7	17	23	-	19	27	31	-47	25	6	+	935.434	
7	17	24	-	14	50	10	-48	28	54	+	950.794	
7	17	25	-	10	2	54	-49	19	41	+	965.613	
7	17	26	-	5	7	45	-49	56	45	+	979.835	
7	17	27	-	0	7	19	-50	19	40	+	993.413	
7	17	28	+	4	55	26	-50	28	8	+	1006.300	
7	17	29	+	9	57	24	-50	22	11	+	1018.453	
7	17	30	+	14	55	29	-50	2	3	+	1029.834	
7	17	31	+	19	46	53	-49	28	13	+	1040.406	
7	17	32	+	24	29	11	-48	41	22	+	1050.139	
7	17	33	+	29	0	35	-47	42	19	+	1059.004	
7	17	34	+	33	19	48	-46	32	1	+	1066.977	TWILIGHT
7	17	35	+	37	26	8	-45	11	25	+	1074.036	TWILIGHT
7	17	36	+	41	19	20	-43	41	30	+	1080.164	TWILIGHT
7	17	37	+	44	59	34	-42	3	12	+	1085.347	TWILIGHT
7	17	38	+	48	27	18	-40	17	25	+	1089.575	TWILIGHT
7	17	39	+	51	43	11	-38	24	57	+	1092.840	TWILIGHT
7	17	40	+	54	48	2	-36	26	34	+	1095.138	TWILIGHT
7	17	41	+	57	42	43	-34	22	56	+	1096.468	TWILIGHT
7	17	42	+	60	28	6	-32	14	39	+	1096.832	
7	17	43	+	63	5	7	-30	2	14	+	1096.235	
7	17	44	+	65	34	36	-27	46	11	+	1094.686	
7	17	45	+	67	57	26	-25	26	54	+	1092.195	
7	17	46	+	70	14	21	-23	4	45	+	1088.775	
7	17	47	+	72	26	10	-20	40	5	+	1084.444	
7	17	48	+	74	33	33	-18	13	10	+	1079.220	
7	17	49	+	76	37	11	-15	44	18	+	1073.123	
7	17	50	+	78	37	44	-13	13	43	+	1066.178	
7	17	51	+	80	35	46	-10	41	37	+	1058.411	
7	17	52	+	82	31	54	- 8	8	15	+	1049.849	
7	17	53	+	84	26	41	- 5	33	48	+	1040.523	
7	17	54	+	86	20	40	- 2	58	27	+	1030.465	
7	17	55	+	88	14	25	- 0	22	24	+	1019.708	

```
  7 17 55   8  LONG.   + 88 30 46  PASS NO.   357 + 1018.072
  7 17 56 + 90   8 28   + 2 14   9                      + 1008.290
  7 17 57 + 92   3 24   + 4 51   0                      +  996.247
  7 17 58 + 93 59 47   + 7 27 57                        +  983.619
  7 17 59 + 95 58 12   +10  4 47                        +  970.446
  7 18   0 + 97 59 17   +12 41 16                       +  956.772
  7 18   1 +100  3 41   +15 17  8                       +  942.639
  7 18   2 +102 12  7   +17 52  7                       +  928.095
  7 18   3 +104 25 20   +20 25 52                       +  913.184
  7 18   4 +106 44  9   +22 58  2                       +  897.954
  7 18   5 +109  9 28   +25 28 14                       +  882.454
  7 18   6 +111 42 13   +27 56  0                       +  866.736
  7 18   7 +114 23 27   +30 20 47                       +  850.848
  7 18   8 +117 14 15   +32 42  0                       +  834.844
TOKAWA 108   7 18   8 55.810   W71.2609    1866.641     NE         **
  7 18   9 +120 15 47   +34 58 57                       +  818.776
  7 18 10 +123 29 15   +37 10 51                        +  802.698
  7 18 11 +126 55 52   +39 16 48                        +  786.665
  7 18 12 +130 36 46   +41 15 48                        +  770.731
  7 18 13 +134 32 59   +43  6 43                        +  754.953
TOKAWA 108   7 18 13 40.431   N60.8632    1331.920     NE
  7 18 14 +138 45 16   +44 48 17                       +  739.387
  7 18 15 +143 14  1   +46 19 12                       +  724.089
  7 18 16 +147 59  2   +47 38  3                       +  709.116
  7 18 17 +152 59 25   +48 43 26                       +  694.526  TWILIGHT
  7 18 18 +158 13 27   +49 34  3                       +  680.375  TWILIGHT
  7 18 19 +163 38 30   +50  8 42                       +  666.721  TWILIGHT
  7 18 20 +169 11  6   +50 26 28                       +  653.618  TWILIGHT
  7 18 21 +174 47 11   +50 26 47                       +  641.125  TWILIGHT
  7 18 22 -179 37 37   +50  9 26                       +  629.294
  7 18 23 -174  7 34   +49 34 39                       +  618.180
  7 18 24 -168 46 29   +48 43  2                       +  607.835
  7 18 25 -163 37 25   +47 35 27                       +  598.309
  7 18 26 -158 42 36   +46 13  5                       +  589.651
  7 18 27 -154  3 21   +44 37 12                       +  581.905
  7 18 28 -149 40 10   +42 49  8                       +  575.115
  7 18 29 -145 32 58   +40 50 14                       +  569.320
  7 18 30 -141 41  7   +38 41 45                       +  564.556
STNFDU  98   7 18 30 33.611   W77.7927    1702.546     SE         **
  7 18 31 -138  3 44   +36 24 54                       +  560.853
GOLDST 103   7 18 31 25.810   W81.4812    1942.109     SE         **
  7 18 32 -134 39 42   +34  0 47                      +  558.240
```

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WHITES 111  7 18 32  7.317  W89.6991    2693.762     SE          **
  7 18 33 -131 27 47  +31 30 24                       +   556.738
  7 18 34 -128 26 45  +28 54 39                       +   556.365
  7 18 35 -125 35 23  +26 14 20                       +   557.131
  7 18 36 -122 52 31  +23 30 12                       +   559.043
STNFDU  98  7 18 36 16.261  S79.2149    1783.969     SE
  7 18 37 -120 17  2  +20 42 54                       +   562.100
  7 18 38 -117 47 54  +17 53  2                       +   566.297
GOLDST 103  7 18 38 23.359  S84.6992    2218.843     SE
  7 18 39 -115 24  8  +15  1  7                       +   571.619
  7 18 40 -113  4 49  +12  7 41                       +   578.049
  7 18 41 -110 49  7  + 9 13 10                       +   585.561
  7 18 42 -108 36 13  + 6 18  1                       +   594.124
  7 18 43 -106 25 19  + 3 22 36                       +   603.701
  7 18 44 -104 15 44  + 0 27 20                       +   614.249
  7 18 45 -102  6 42  - 2 27 25                       +   625.720
  7 18 46 - 99 57 33  - 5 21 19                       +   638.060
  7 18 47 - 97 47 33  - 8 14  0                       +   651.212
  7 18 48 - 95 36  2  -11  5  7                       +   665.113
  7 18 49 - 93 22 16  -13 54 19                       +   679.698
  7 18 50 - 91  5 31  -16 41 14                       +   694.898
  7 18 51 - 88 45  2  -19 25 29                       +   710.640
  7 18 52 - 86 20  1  -22  6 40                       +   726.851
  7 18 53 - 83 49 40  -24 44 23                       +   743.456
  7 18 54 - 81 13  7  -27 18 11                       +   760.379
  7 18 55 - 78 29 28  -29 47 33                       +   777.542
  7 18 56 - 75 37 48  -32 11 59                       +   794.867
SNTAGO 122  7 18 56 24.125  W26.5900     883.753     SE          **
  7 18 57 - 72 37 11  -34 30 52                       +   812.279
SNTAGO 122  7 18 57 37.026  S22.7800     883.082     SE
  7 18 58 - 69 26 43  -36 43 35                       +   829.701
  7 18 59 - 66  5 28  -38 49 25                       +   847.060
  7 19  0 - 62 32 40  -40 47 38                       +   864.281
  7 19  1 - 58 47 38  -42 37 23                       +   881.294
  7 19  2 - 54 49 56  -44 17 48                       +   898.029
  7 19  3 - 50 39 28  -45 47 59                       +   914.422
  7 19  4 - 46 16 30  -47  7  1                       +   930.407
  7 19  5 - 41 41 50  -48 14  1                       +   945.926
  7 19  6 - 36 56 47  -49  8 10                       +   960.920
  7 19  7 - 32  3 19  -49 48 45                       +   975.335
  7 19  8 - 27  3 53  -50 15 16                       +   989.120
  7 19  9 - 22  1 20  -50 27 22                       +  1002.229
```

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  7 19 10 - 16 58 48   -50 25  2                          + 1014.618
  7 19 11 - 11 59 23   -50  8 24                          + 1026.246
  7 19 12 -  7  6  0   -49 37 56                          + 1037.077
  7 19 13 -  2 21 10   -48 54 16                          + 1047.079
  7 19 14 +  2 13  9   -47 58 11                          + 1056.221
  7 19 15 +  6 35 33   -46 50 35                          + 1064.480  TWILIGHT
  7 19 16 + 10 45 10   -45 32 27                          + 1071.831  TWILIGHT
  7 19 17 + 14 41 40   -44  4 46                          + 1078.257  TWILIGHT
  7 19 18 + 18 25  8   -42 28 27                          + 1083.743  TWILIGHT
  7 19 19 + 21 55 57   -40 44 27                          + 1088.277  TWILIGHT
  7 19 20 + 25 14 45   -38 53 34                          + 1091.851  TWILIGHT
JOBURG 118  7 19 20 57.227  S56.0423   1711.681    NE
  7 19 21 + 28 22 17   -36 56 35                          + 1094.459  TWILIGHT
  7 19 22 + 31 19 25   -34 54 12                          + 1096.100  TWILIGHT
  7 19 23 + 34  7  3   -32 47  1                          + 1096.774
  7 19 24 + 36 46  3   -30 35 35                          + 1096.487
  7 19 25 + 39 17 21   -28 20 24                          + 1095.244
JOBURG 118  7 19 25 59.770  E59.3737   1817.643    NE          **
  7 19 26 + 41 41 44   -26  1 53                          + 1093.057
  7 19 27 + 44  0  3   -23 40 25                          + 1089.937
  7 19 28 + 46 13  4   -21 16 22                          + 1085.900
  7 19 29 + 48 21 28   -18 50  0                          + 1080.964
  7 19 30 + 50 25 59   -16 21 37                          + 1075.149
  7 19 31 + 52 27 13   -13 51 27                          + 1068.479
  7 19 32 + 54 25 49   -11 19 44                          + 1060.979
  7 19 33 + 56 22 20   - 8 46 41                          + 1052.674
  7 19 34 + 58 17 23   - 6 12 31                          + 1043.596
  7 19 35 + 60 11 29   - 3 37 24                          + 1033.775
  7 19 36 + 62  5 13   - 1  1 33                          + 1023.245
   7 19 36 23  LONG.   + 62 50  4  PASS NO.  358 + 1018.832
  7 19 37 + 63 59  8   + 1 34 52                          + 1012.041
  7 19 38 + 65 53 45   + 4 11 37                          + 1000.201
  7 19 39 + 67 49 41   + 6 48 32                          +  987.762
  7 19 40 + 69 47 29   + 9 25 23                          +  974.765
  7 19 41 + 71 47 48   +12  1 56                          +  961.253
  7 19 42 + 73 51 16   +14 37 57                          +  947.268
  7 19 43 + 75 58 34   +17 13  7                          +  932.855
  7 19 44 + 78 10 28   +19 47 10                          +  918.060
  7 19 45 + 80 27 45   +22 19 44                          +  902.931
  7 19 46 + 82 51 17   +24 50 26                          +  887.515
  7 19 47 + 85 22  0   +27 18 48                          +  871.863
  7 19 48 + 88  0 56   +29 44 21                          +  856.026
```

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  7 19 49 + 90 49  8   +32  6 30                          +  840.054
  7 19 50 + 93 47 46   +34 24 33                          +  824.001
  7 19 51 + 96 58  1   +36 37 47                          +  807.919
  7 19 52 +100 21  6   +38 45 18                          +  791.865
  7 19 53 +103 58 11   +40 46  9                          +  775.891
  7 19 54 +107 50 19   +42 39 12                          +  760.054
  7 19 55 +111 58 22   +44 23 15                          +  744.409
  7 19 56 +116 22 48   +45 57  0                          +  729.015
  7 19 57 +121  3 37   +47 19  3                          +  713.927
  7 19 58 +126  0  6   +48 28  0                          +  699.202  TWILIGHT
  7 19 59 +131 10 46   +49 22 31                          +  684.898  TWILIGHT
  7 20  0 +136 33 11   +50  1 22                          +  671.072  TWILIGHT
TOKAWA 108  7 20  0  8.747  N77.1631    1896.936     NE
  7 20  1 +142  4  7   +50 23 32                          +  657.779  TWILIGHT
  7 20  2 +147 39 38   +50 28 23                          +  645.078  TWILIGHT
  7 20  3 +153 15 25   +50 15 36                          +  633.022  TWILIGHT
  7 20  4 +158 47  7   +49 45 17                          +  621.665
  7 20  5 +164 10 47   +48 57 56                          +  611.061
  7 20  6 +169 23  8   +47 54 24                          +  601.261
  7 20  7 +174 21 45   +46 35 45                          +  592.313
  7 20  8 +179  5  5   +45  3 15                          +  584.264
  7 20  9 -176 27 36   +43 18 13                          +  577.158
  7 20 10 -172 16 20   +41 22  0                          +  571.035
  7 20 11 -168 20 37   +39 15 54                          +  565.933
  7 20 12 -164 39 36   +37  1  7                          +  561.883
  7 20 13 -161 12 13   +34 38 48                          +  558.916
BSANDS 100  7 20 13 25.469  N73.1922    1445.384     SE
  7 20 14 -157 57 17   +32  9 57                          +  557.054
  7 20 15 -154 53 32   +29 35 30                          +  556.316
  7 20 16 -151 59 47   +26 56 18                          +  556.716
  7 20 17 -149 14 48   +24 13  5                          +  558.261
BSANDS 100  7 20 17 47.122  E73.5068    1466.547     SE        **
  7 20 18 -146 37 30   +21 26 32                          +  560.952
  7 20 19 -144  6 48   +18 37 15                          +  564.786
  7 20 20 -141 41 44   +15 45 49                          +  569.752
  7 20 21 -139 21 20   +12 52 42                          +  575.832
  7 20 22 -137  4 45   + 9 58 24                          +  583.004
  7 20 23 -134 51 10   + 7  3 20                          +  591.238
  7 20 24 -132 39 48   + 4  7 56                          +  600.499
  7 20 25 -130 29 55   + 1 12 33                          +  610.745
  7 20 26 -128 20 47   - 1 42 24                          +  621.930
  7 20 27 -126 11 42   - 4 36 36                          +  634.003
```

7	20	28	-124	1	57	- 7	29	40			+ 646.906	
7	20	29	-121	50	52	-10	21	16			+ 660.578	
7	20	30	-119	37	42	-13	11	2			+ 674.955	
7	20	31	-117	21	45	-15	58	37			+ 689.969	
7	20	32	-115	2	15	-18	43	38			+ 705.549	
7	20	33	-112	38	26	-21	25	41			+ 721.621	
7	20	34	-110	9	28	-24	4	23			+ 738.111	
7	20	35	-107	34	32	-26	39	16			+ 754.942	
7	20	36	-104	52	44	-29	9	52			+ 772.037	
7	20	37	-102	3	9	-31	35	39			+ 789.319	
7	20	38	- 99	4	51	-33	56	4			+ 806.712	
7	20	39	- 95	56	54	-36	10	27			+ 824.138	
7	20	40	- 92	38	25	-38	18	9			+ 841.524	
7	20	41	- 89	8	32	-40	18	24			+ 858.795	
7	20	42	- 85	26	34	-42	10	25			+ 875.880	
7	20	43	- 81	32	2	-43	53	19			+ 892.709	
7	20	44	- 77	24	43	-45	26	12			+ 909.216	
7	20	45	- 73	4	46	-46	48	10			+ 925.335	
7	20	46	- 68	32	51	-47	58	18			+ 941.006	
7	20	47	- 63	50	12	-48	55	47			+ 956.170	
7	20	48	- 58	58	33	-49	39	51			+ 970.772	
7	20	49	- 54	0	17	-50	9	57			+ 984.760	
7	20	50	- 48	58	9	-50	25	42			+ 998.087	
7	20	51	- 43	55	13	-50	26	58			+ 1010.707	
7	20	52	- 38	54	41	-50	13	54			+ 1022.579	
7	20	53	- 33	59	28	-49	46	50			+ 1033.665	
7	20	54	- 29	12	13	-49	6	24			+ 1043.932	
7	20	55	- 24	35	3	-48	13	19			+ 1053.350	
7	20	56	- 20	9	32	-47	8	30			+ 1061.891	TWILIGHT
7	20	57	- 15	56	38	-45	52	54			+ 1069.532	TWILIGHT
7	20	58	- 11	56	49	-44	27	29			+ 1076.255	TWILIGHT
7	20	59	- 8	10	5	-42	53	14			+ 1082.042	TWILIGHT
7	21	0	- 4	36	8	-41	11	3			+ 1086.881	TWILIGHT
7	21	1	- 1	14	24	-39	21	48			+ 1090.763	TWILIGHT
7	21	2	+ 1	55	53	-37	26	16			+ 1093.680	TWILIGHT
7	21	3	+ 4	55	32	-35	25	10			+ 1095.632	TWILIGHT
7	21	4	+ 7	45	27	-33	19	7			+ 1096.617	
7	21	5	+ 10	26	32	-31	8	41			+ 1096.639	
7	21	6	+ 12	59	39	-28	54	24			+ 1095.704	
7	21	7	+ 15	25	41	-26	36	41			+ 1093.821	
JOBURG	118	7	21	7	14.749	W56.1765			1714.898		NE	**
7	21	8	+ 17	45	26	-24	15	56			+ 1091.001	

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  7 21  9 + 19 59 41   -21 52 30                          + 1087.260
  7 21 10 + 22  9 11   -19 26 41                          + 1082.615
  7 21 11 + 24 14 34   -16 58 48                          + 1077.085
  7 21 12 + 26 16 33   -14 29  4                          + 1070.692
  7 21 13 + 28 15 44   -11 57 45                          + 1063.460
  7 21 14 + 30 12 42   - 9 25  2                          + 1055.416
  7 21 15 + 32  8  2   - 6 51  9                          + 1046.589
  7 21 16 + 34  2 18   - 4 16 17                          + 1037.009
  7 21 17 + 35 56  3   - 1 40 37                          + 1026.708
   7 21 17 38  LONG.   + 37  9 21  PASS NO.  359 + 1019.631
  7 21 18 + 37 49 50   + 0 55 38                          + 1015.723
  7 21 19 + 39 44 12   + 3 32 17                          + 1004.089
  7 21 20 + 41 39 43   + 6  9  8                          +  991.844
  7 21 21 + 43 36 58   + 8 45 59                          +  979.028
  7 21 22 + 45 36 33   +11 22 36                          +  965.681
  7 21 23 + 47 39  8   +13 58 43                          +  951.848
  7 21 24 + 49 45 21   +16 34  6                          +  937.572
  7 21 25 + 51 55 59   +19  8 25                          +  922.899
  7 21 26 + 54 11 46   +21 41 20                          +  907.875
  7 21 27 + 56 33 36   +24 12 30                          +  892.550
  7 21 28 + 59  2 21   +26 41 28                          +  876.971
  7 21 29 + 61 39  3   +29  7 44                          +  861.189
  7 21 30 + 64 24 44   +31 30 45                          +  845.256
  7 21 31 + 67 20 33   +33 49 53                          +  829.223
  7 21 32 + 70 27 39   +36  4 22                          +  813.144
  7 21 33 + 73 47 18   +38 13 24                          +  797.074
  7 21 34 + 77 20 38   +40 16  0                          +  781.065
  7 21 35 + 81  8 45   +42 11  7                          +  765.176
  7 21 36 + 85 12 35   +43 57 33                          +  749.460
  7 21 37 + 89 32 44   +45 34  3                          +  733.975
  7 21 38 + 94  9 18   +46 59 12                          +  718.777
  7 21 39 + 99  1 48   +48 11 38                          +  703.924
  7 21 40 +104  8 55   +49  9 58                          +  689.473  TWILIGHT
  7 21 41 +109 28 30   +49 52 55                          +  675.481  TWILIGHT
  7 21 42 +114 57 30   +50 19 28                          +  662.005  TWILIGHT
  7 21 43 +120 32 10   +50 28 49                          +  649.101  TWILIGHT
  7 21 44 +126  8 13   +50 20 35                          +  636.825  TWILIGHT
  7 21 45 +131 41 18   +49 54 46                          +  625.232
  7 21 46 +137  7 19   +49 1  45                          +  614.374
TOKAWA 108  7 21 46  2.580  N77.0256   1769.782    SE
  7 21 47 +142 22 49   +48 12 19                          +  604.304
  7 21 48 +147 25  7   +46 57 28                          +  595.071
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  7 21 49 +152 12 27   +45 28 27                          +   586.723
  7 21 50 +156 43 54   +43 46 32                          +   579.305
  7 21 51 +160 59 16   +41 53  7                          +   572.857
  7 21 52 +164 58 56   +39 49 27                          +   567.420
  7 21 53 +168 43 39   +37 36 49                          +   563.026
  7 21 54 +172 14 26   +35 16 21                          +   559.706
  7 21 55 +175 32 29   +32 49  6                          +   557.485
  7 21 56 +178 39  0   +30 16  2                          +   556.384
  7 21 57 -178 24 45   +27 37 59                          +   556.418
  7 21 58 -175 37 37   +24 55 44                          +   557.595
  7 21 59 -172 58 26   +22  9 59                          +   559.921
BSANDS 100  7 21 59   2.699   W74.4358    1511.620      SE         **
  7 22  0 -170 26  6   +19 21 21                          +   563.391
  7 22  1 -167 59 38   +16 30 23                          +   567.998
  7 22  2 -165 38  6   +13 37 39                          +   573.726
  7 22  3 -163 20 35   +10 43 35                          +   580.554
  7 22  4 -161  6 17   + 7 48 39                          +   588.456
BSANDS 100  7 22  4 35.646   580.2887    1934.573      SE
  7 22  5 -158 54 24   + 4 53 16                          +   597.396
  7 22  6 -156 44 10   + 1 57 49                          +   607.336
  7 22  7 -154 34 53   - 0 57 19                          +   618.230
  7 22  8 -152 25 49   - 3 51 47                          +   630.029
  7 22  9 -150 16 17   - 6 45 13                          +   642.676
  7 22 10 -148  5 34   - 9 37 16                          +   656.113
  7 22 11 -145 52 58   -12 27 35                          +   670.276
  7 22 12 -143 37 46   -15 15 48                          +   685.098
  7 22 13 -141 19 12   -18  1 33                          +   700.507
  7 22 14 -138 56 32   -20 44 28                          +   716.432
  7 22 15 -136 28 55   -23 24  7                          +   732.799
  7 22 16 -133 55 32   -26  0  4                          +   749.531
  7 22 17 -131 15 32   -28 31 51                          +   766.551
  7 22 18 -128 27 58   -30 58 58                          +   783.783
  7 22 19 -125 31 55   -33 20 50                          +   801.148
  7 22 20 -122 26 27   -35 36 52                          +   818.572
  7 22 21 -119 10 39   -37 46 23                          +   835.978
  7 22 22 -115 43 40   -39 48 38                          +   853.292
  7 22 23 -112  4 46   -41 42 51                          +   870.443
  7 22 24 -108 13 22   -43 29 11                          +   887.358
  7 22 25 -104  9 12   -45  7 43                          +   903.972
  7 22 26 - 99 52 19   -46 28 33                          +   920.219
  7 22 27 - 95 23 15   -47 41 47                          +   936.037
  7 22 28 - 90 43  4   -48 42 32                          +   951.366
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  7 22 29 - 85 53 24  +49 30  3                          +  966.149
  7 22 30 - 80 56 28  +50  3 43                          +  980.336
  7 22 31 - 75 54 56  +50 23  6                          +  993.875
  7 22 32 - 70 51 50  +50 28  1                          + 1006.721
  7 22 33 - 65 50 20  +50 18 30                          + 1018.833
  7 22 34 - 60 53 27  +49 54 54                          + 1030.171
  7 22 35 - 56  3 56  +49 17 44                          + 1040.701
  7 22 36 - 51 24  1  +48 27 44                          + 1050.390
  7 22 37 - 46 55 25  +47 25 45                          + 1059.212
  7 22 38 - 42 39 16  +46 12 44                          + 1067.141  TWILIGHT
  7 22 39 - 38 36  7  +44 49 40                          + 1074.158  TWILIGHT
  7 22 40 - 34 46  7  +43 17 32                          + 1080.244  TWILIGHT
  7 22 41 - 31  9  0  +41 37 14                          + 1085.387  TWILIGHT
  7 22 42 - 27 44 16  +39 49 39                          + 1089.575  TWILIGHT
  7 22 43 - 24 31 11  +37 55 37                          + 1092.802  TWILIGHT
  7 22 44 - 21 28 57  +35 55 49                          + 1095.064  TWILIGHT
  7 22 45 - 18 36 42  +33 50 57                          + 1096.359  TWILIGHT
  7 22 46 - 15 53 29  +31 41 33                          + 1096.691
  7 22 47 - 13 18 28  +29 28 11                          + 1096.064
  7 22 48 - 10 50 45  +27 11 17                          + 1094.486
  7 22 49 -  8 29 30  +24 51 15                          + 1091.969
  7 22 50 -  6 13 58  +22 28 28                          + 1088.526
  7 22 51 -  4  3 22  +20  3 14                          + 1084.173
  7 22 52 -  1 57  2  +17 35 51                          + 1078.929
SANANA 116  7 22 52 56.985  S67.3321   2109.350     NE
  7 22 53 +  0  5 43  +15  6 35                          + 1072.815
  7 22 54 +  2  5 32  +12 35 39                          + 1065.854
  7 22 55 +  4  2 59  +10  3 18                          + 1058.074
  7 22 56 +  5 58 39  + 7 29 42                          + 1049.500
  7 22 57 +  7 53  6  + 4 55  6                          + 1040.164
  7 22 58 +  9 46 55  + 2 19 39                          + 1030.098
SANANA 116  7 22 58 53.457  E59.3242   1710.718     NE        **
   7 22 58 53  LONG.  + 11 28 38  PASS NO.  360 + 1020.467
  7 22 59 + 11 40 36  + 0 16 27                          + 1019.334
  7 23  0 + 13 34 45  + 2 52 59                          + 1007.911
  7 23  1 + 15 29 53  + 5 29 46                          +  995.863
  7 23  2 + 17 26 36  + 8  6 36                          +  983.231
  7 23  3 + 19 25 31  +10 43 15                          +  970.056
  7 23  4 + 21 27 14  +13 19 29                          +  956.380
  7 23  5 + 23 32 26  +15 55  1                          +  942.246
  7 23  6 + 25 41 50  +18 29 36                          +  927.700
  7 23  7 + 27 56 12  +21  2 52                          +  912.788
```

	7	23	8	+	30	16	22	+23	34	28			+	897.557	
	7	23	9	+	32	43	15	+26	3	59			+	882.056	
	7	23	10	+	35	17	46	+28	30	56			+	866.335	
	7	23	11	+	38	1	1	+30	54	48			+	850.446	
	7	23	12	+	40	54	5	+33	14	56			+	834.440	
	7	23	13	+	43	58	9	+35	30	38			+	818.370	
	7	23	14	+	47	14	25	+37	41	5			+	802.290	
	7	23	15	+	50	44	5	+39	45	23			+	786.254	
	7	23	16	+	54	28	16	+41	42	29			+	770.317	
	7	23	17	+	58	27	56	+43	31	14			+	754.536	
	7	23	18	+	62	43	48	+45	10	22			+	738.966	
	7	23	19	+	67	16	5	+46	38	32			+	723.666	
	7	23	20	+	72	4	30	+47	54	20			+	708.691	
	7	23	21	+	77	7	56	+48	56	24			+	694.099	TWILIGHT
	7	23	22	+	82	24	29	+49	43	24			+	679.947	TWILIGHT
	7	23	23	+	87	51	20	+50	14	15			+	666.293	TWILIGHT
	7	23	24	+	93	24	51	+50	28	5			+	653.193	TWILIGHT
	7	23	25	+	99	0	52	+50	24	24			+	640.703	TWILIGHT
	7	23	26	+104	35	3		+50	3	5			+	628.878	
	7	23	27	+110	3	12		+49	24	28			+	617.771	
	7	23	28	+115	21	38		+48	29	12			+	607.436	
	7	23	29	+120	27	30		+47	18	14			+	597.924	
	7	23	30	+125	18	47		+45	52	46			+	589.281	
	7	23	31	+129	54	21		+44	14	5			+	581.554	
	7	23	32	+134	13	51		+42	23	31			+	574.786	
TOKAWA	108		7	23	32	45.790		N53.7672			900.251		SE		
	7	23	33	+138	17	30		+40	22	24			+	569.017	
	7	23	34	+142	5	58		+38	11	59			+	564.281	
	7	23	35	+145	40	15		+35	53	27			+	560.611	
TOKAWA	108		7	23	35	26.300		E67.1670			1088.567		SE		**
	7	23	36	+149	1	28		+33	27	53			+	558.033	
	7	23	37	+152	10	52		+30	56	14			+	556.569	
	7	23	38	+155	9	39		+28	19	27			+	556.238	
	7	23	39	+157	59	2		+25	38	1			+	557.048	
	7	23	40	+160	40	12		+22	53	14			+	559.006	
	7	23	41	+163	14	13		+20	5	17			+	562.112	
	7	23	42	+165	42	7		+17	14	53			+	566.358	
	7	23	43	+168	4	52		+14	22	3			+	571.732	
	7	23	44	+170	23	21		+11	28	44			+	578.214	
	7	23	45	+172	38	25		+ 8	33	58			+	585.778	
	7	23	46	+174	50	53		+ 5	38	37			+	594.393	
	7	23	47	+177	1	30		+ 2	43	7			+	604.022	

```
  7 23 48 +179 10 59   - 0 12 10                          +  614.620
  7 23 49 -178 39 56   - 3  6 52                          +  626.139
  7 23 50 -176 30 33   - 6  0 39                          +  638.525
  7 23 51 -174 20 10   - 8 53  8                          +  651.721
  7 23 52 -172  8  5   -11 43 58                          +  665.663
SAMOAI 114  7 23 52 38.040  N 8.4247     681.511     SE
SAMOAI 114  7 23 52 55.138  E 6.4051     682.941     SE         **
  7 23 53 -169 53 35   -14 32 48                          +  680.284
  7 23 54 -167 35 55   -17 19 17                          +  695.517
  7 23 55 -165 14 19   -20  3  0                          +  711.288
  7 23 56 -162 48  1   -22 43 34                          +  727.524
  7 23 57 -160 16  9   -25 20 33                          +  744.149
  7 23 58 -157 37 52   -27 53 30                          +  761.087
  7 23 59 -154 52 15   -30 21 54                          +  778.260
  8  0  0 -151 58 24   -32 45 13                          +  795.592
  8  0  1 -148 55 21   -35  2 50                          +  813.004
  8  0  2 -145 42 12   -37 14  7                          +  830.423
  8  0  3 -142 18  4   -39 18 20                          +  847.773
  8  0  4 -138 42 10   -41 14 42                          +  864.982
  8  0  5 -134 53 55   -43  2 24                          +  881.978
  8  0  6 -130 52 54   -44 40 31                          +  898.693
  8  0  7 -126 39  7   -46  8 11                          +  915.061
  8  0  8 -122 12 59   -47 24 27                          +  931.019
  8  0  9 -117 35 23   -48 28 26                          +  946.507
  8  0 10 -112 47 50   -49 19 22                          +  961.468
  8  0 11 -107 52 24   -49 56 35                          +  975.847
  8  0 12 -102 51 40   -50 19 35                          +  989.594
  8  0 13 - 97 48 36   -50 28  8                          + 1002.663
  8  0 14 - 92 46 20   -50 22 14                          + 1015.011
  8  0 15 - 87 47 56   -50  2  7                          + 1026.597
  8  0 16 - 82 56 17   -49 28 16                          + 1037.385
  8  0 17 - 78 13 43   -48 41 24                          + 1047.343
  8  0 18 - 73 42  7   -47 42 19                          + 1056.443
  8  0 19 - 69 22 44   -46 31 57                          + 1064.657  TWILIGHT
  8  0 20 - 65 16 16   -45 11 18                          + 1071.966  TWILIGHT
  8  0 21 - 61 22 57   -43 41 19                          + 1078.350  TWILIGHT
  8  0 22 - 57 42 38   -42  2 57                          + 1083.795  TWILIGHT
  8  0 23 - 54 14 52   -40 17  7                          + 1088.290  TWILIGHT
  8  0 24 - 50 58 56   -38 24 36                          + 1091.825  TWILIGHT
  8  0 25 - 47 54  4   -36 26 10                          + 1094.396  TWILIGHT
  8  0 26 - 44 59 24   -34 22 29                          + 1096.003  TWILIGHT
  8  0 27 - 42 14  1   -32 14 10                          + 1096.644
```

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  8   0 28 - 39 37  2   -30  1 45                          + 1096.325
  8   0 29 - 37  7 35   -27 45 41                          + 1095.054
  8   0 30 - 34 44 48   -25 26 25                          + 1092.840
  8   0 31 - 32 27 55   -23  4 17                          + 1089.695
  8   0 32 - 30 16 11   -20 39 39                          + 1085.636
  8   0 33 - 28  8 51   -18 12 47                          + 1080.680
  8   0 34 - 26  5 16   -15 43 59                          + 1074.847
  8   0 35 - 24  4 49   -13 13 28                          + 1068.161
  8   0 36 - 22  6 51   -10 41 27                          + 1060.646
  8   0 37 - 20 10 48   - 8  8 11                          + 1052.330
  8   0 38 - 18 16  7   - 5 33 50                          + 1043.241
  8   0 39 - 16 22 13   - 2 58 36                          + 1033.411
  8   0 40 - 14 28 35   - 0 22 42                          + 1022.874
SANANA 116  8  0 40  8.560  W66.3546   1982.294     NE          **
    8  0 40  8  LONG.   - 14 12  1  PASS NO.  361 + 1021.245
  8   0 41 - 12 34 38   + 2 13 43                          + 1011.664
  8   0 42 - 10 39 50   + 4 50 26                          +  999.819
  8   0 43 -  8 43 36   + 7 27 14                          +  987.376
  8   0 44 -  6 45 19   +10  3 54                          +  974.376
  8   0 45 -  4 44 25   +12 40 13                          +  960.862
  8   0 46 -  2 40 11   +15 15 55                          +  946.875
  8   0 47 -  0 31 58   +17 50 43                          +  932.460
SANANA 116  8  0 47 14.452  N70.4742   2366.541     NE
  8   0 48 +  1 41  3   +20 24 18                          +  917.664
  8   0 49 +  3 59 37   +22 56 19                          +  902.533
  8   0 50 +  6 24 39   +25 26 22                          +  887.117
HOLBRG 101  8  0 50 54.494  S82.3783   2702.427     NE
  8   0 51 +  8 57  5   +27 53 38                          +  871.463
  8   0 52 + 11 37 58   +30 18 37                          +  855.624
  8   0 53 + 14 28 23   +32 39 43                          +  839.650
  8   0 54 + 17 29 28   +34 56 35                          +  823.595
  8   0 55 + 20 42 27   +37  8 25                          +  807.511
  8   0 56 + 24  8 31   +39 14 1                           +  791.453
  8   0 57 + 27 48 49   +41 13 2                           +  775.476
  8   0 58 + 31 44 24   +43  4 1                           +  759.636
  8   0 59 + 35 55 59   +44 45 5                           +  743.988
  8   1  0 + 40 23 59   +46 17                             +  728.591
  8   1  1 + 45  8 15   +47 36                             +  713.500
  8   1  2 + 50  7 54   +48 41 3                           +  698.773  TWILIGHT
  8   1  3 + 55 21 14   +49 32 5                           +  684.468  TWILIGHT
  8   1  4 + 60 45 39   +50  7 5                           +  670.642  TWILIGHT
  8   1  5 + 66 17 45   +50 26 1                           +  657.351  TWILIGHT
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  8   1   6 + 71 53 28   +50 27  2                          +   644.652  TWILIGHT
  8   1   7 + 77 28 28   +50 10 16                          +   632.601  TWILIGHT
  8   1   8 + 82 58 28   +49 36  4                          +   621.252
  8   1   9 + 88 19 39   +48 45  1                          +   610.657
  8   1  10 + 93 28 56   +47 38  1                          +   600.869
  8   1  11 + 98 24  5   +46 16 12                          +   591.936
  8   1  12 +103  3 45   +44 40 49                          +   583.905
  8   1  13 +107 27 22   +42 53 13                          +   576.820
  8   1  14 +111 35  3   +40 54 43                          +   570.722
  8   1  15 +115 27 21   +38 46 36                          +   565.648
  8   1  16 +119  5 11   +36 30  5                          +   561.629
TOKAWA 108  8  1 16 41.898   W76.3179    1610.335     SE         **
  8   1  17 +122 29 40   +34  6 14                          +   558.696
  8   1  18 +125 42  0   +31 36  4                          +   556.872
  8   1  19 +128 43 25   +29  0 30                          +   556.175
  8   1  20 +131 35  8   +26 20 20                          +   556.618
  8   1  21 +134 18 20   +23 36 18                          +   558.209
  8   1  22 +136 54  6   +20 49  3                          +   560.949
TOKAWA 108  8  1 22 10.828   S78.8976    1767.700     SE
  8   1  23 +139 23 31   +17 59 13                          +   564.833
  8   1  24 +141 47 31   +15  7 18                          +   569.850
  8   1  25 +144  7  3   +12 13 49                          +   575.982
  8   1  26 +146 22 56   + 9 19 14                          +   583.206
  8   1  27 +148 36  2   + 6 23 59                          +   591.493
  8   1  28 +150 47  4   + 3 28 27                          +   600.805
  8   1  29 +152 56 49   + 0 33  3                          +   611.102
  8   1  30 +155  5 58   - 2 21 53                          +   622.336
  8   1  31 +157 15 14   - 5 15 58                          +   634.456
  8   1  32 +159 25 20   - 8  8 52                          +   647.403
  8   1  33 +161 36 57   -11  0 12                          +   661.117
  8   1  34 +163 50 47   -13 49 38                          +   675.532
  8   1  35 +166  7 36   -16 36 47                          +   690.580
  8   1  36 +168 28 10   -19 21 18                          +   706.190
  8   1  37 +170 53 14   -22  2 46                          +   722.288
  8   1  38 +173 23 39   -24 40 46                          +   738.798
  8   1  39 +176  0 16   -27 14 50                          +   755.646
  8   1  40 +178 43 58   -29 44 29                          +   772.753
  8   1  41 -178 24 18   -32  9 12                          +   790.043
  8   1  42 -175 23 38   -34 28 23                          +   807.438
  8   1  43 -172 13  4   -36 41 23                          +   824.863
  8   1  44 -168 51 45   -38 47 30                          +   842.241
  8   1  45 -165 18 50   -40 45 58                          +   859.501
```

	8	1	46	-161	33	40	-42	35	59				+ 876.571	
	8	1	47	-157	35	50	-44	16	39				+ 893.380	
	8	1	48	-153	25	11	-45	47	4				+ 909.864	
	8	1	49	-149	2	1	-47	6	19				+ 925.956	
	8	1	50	-144	27	6	-48	13	30				+ 941.597	
	8	1	51	-139	41	48	-49	7	49				+ 956.728	
	8	1	52	-134	48	2	-49	48	33				+ 971.295	
	8	1	53	-129	48	18	-50	15	10				+ 985.247	
	8	1	54	-124	45	27	-50	27	22				+ 998.534	
	8	1	55	-119	42	36	-50	25	4				+ 1011.112	
	8	1	56	-114	42	53	-50	8	28				+ 1022.942	
	8	1	57	-109	49	13	-49	38	0				+ 1033.986	
	8	1	58	-105	4	8	-48	54	18				+ 1044.210	
	8	1	59	-100	29	36	-47	58	11				+ 1053.584	
	8	2	0	- 96	7	1	-46	50	32				+ 1062.082	TWILIGHT
	8	2	1	- 91	57	15	-45	32	21				+ 1069.681	TWILIGHT
	8	2	2	- 88	0	38	-44	4	35				+ 1076.361	TWILIGHT
	8	2	3	- 84	17	5	-42	28	13				+ 1082.107	TWILIGHT
	8	2	4	- 80	46	12	-40	44	9				+ 1086.906	TWILIGHT
	8	2	5	- 77	27	22	-38	53	1[illegible]				+ 1090.748	TWILIGHT
	8	2	6	- 74	19	48	-36	56	11				+ 1093.629	TWILIGHT
	8	2	7	- 71	22	40	-34	53	4[illegible]				+ 1095.545	TWILIGHT
AGASTA	123	8	2	7	23.167		S5[illegible]0691		1664.277		NE			
SNTAGO	122	8	2	7	14.742		S [illegible]7		1104.939		NE			
SNTAGO	122	8	2	7	49.411		E 9.[illegible]059		1107.610		NE			**
	8	2	8	- 68	35	4	-32	46	3[illegible]				+ 1096.497	
	8	2	9	- 65	56	4	-30	35	[illegible]				+ 1096.487	
	8	2	10	- 63	24	49	-28	19	5[illegible]				+ 1095.522	
	8	2	11	- 61	0	28	-26	1	2[illegible]				+ 1093.612	
	8	2	12	- 58	42	12	-23	39	56				+ 1090.768	
AGASTA	123	8	2	12	0.929		E56.[illegible]013		1680.939		NE			**
	8	2	13	- 56	29	15	-21	15	5[illegible]				+ 1087.004	
	8	2	14	- 54	20	54	-18	49	3[illegible]				+ 1082.338	
	8	2	15	- 52	16	27	-16	21	1[illegible]				+ 1076.789	
	8	2	16	- 50	15	17	-13	51	10				+ 1070.379	
	8	2	17	- 48	16	47	-11	19	3[illegible]				+ 1063.133	
	8	2	18	- 46	20	20	- 8	46	3				+ 1055.076	
	8	2	19	- 44	25	22	- 6	12	3[illegible]				+ 1046.238	
	8	2	20	- 42	31	22	- 3	37	3[illegible]				+ 1036.648	
	8	2	21	- 40	37	44	- 1	1	4[illegible]				+ 1026.341	
	8	2	21	23	LONG.		- 39	52	4[illegible]	PASS NO.	362	+	1021.991	
	8	2	22	- 38	43	57	+ 1	34	3[illegible]				+ 1015.349	

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  8   2 23  -  36 49 26   + 4 11  7                          +  1003.709
  8   2 24  -  34 53 38   + 6 47 52                          +   991.460
  8   2 25  -  32 55 58   + 9 24 34                          +   978.640
  8   2 26  -  30 55 49   +12  0 57                          +   965.291
  8   2 27  -  28 52 32   +14 36 47                          +   951.456
  8   2 28  -  26 45 25   +17 11 48                          +   937.179
  8   2 29  -  24 33 44   +19 45 41                          +   922.504
  8   2 30  -  22 16 42   +22 18  5                          +   907.479
  8   2 31  -  19 53 26   +24 48 37                          +   892.152
  8   2 32  -  17 23  1   +27 16 50                          +   876.571
  8   2 33  -  14 44 26   +29 42 15                          +   860.787
  8   2 34  -  11 56 36   +32  4 16                          +   844.852
  8   2 35  -   8 58 24   +34 22 14                          +   828.817
  8   2 36  -   5 48 37   +36 35 23                          +   812.735
  8   2 37  -   2 26  4   +38 42 52                          +   796.662
  8   2 38  +   1 10 26   +40 43 41                          +   780.650
  8   2 39  +   5  1 57   +42 36 47                          +   764.757
HDLBRG 101   8   2 39 53.721   542.0625     970.302     NE
  8   2 40  +   9  9 18   +44 20 56                          +   749.038
  8   2 41  +  13 33  1   +45 54 50                          +   733.550
  8   2 42  +  18 13  5   +47 17  6                          +   718.349
  8   2 43  +  23  8 50   +48 26 20                          +   703.494
  8   2 44  +  28 18 46   +49 21 12                          +   689.042   TWILIGHT
  8   2 45  +  33 40 33   +50  0 28                          +   675.049   TWILIGHT
  8   2 46  +  39 10 57   +50 23  7                          +   661.574   TWILIGHT
  8   2 47  +  44 46  3   +50 28 30                          +   648.673   TWILIGHT
  8   2 48  +  50 21 35   +50 16 16                          +   636.401   TWILIGHT
  8   2 49  +  55 53 11   +49 46 32                          +   624.814
  8   2 50  +  61 16 55   +48 59 46                          +   613.965
  8   2 51  +  66 29 28   +47 56 48                          +   603.906
HDLBRG 101   8   2 49 31.224   E77.9064    3341.226     SE          **
  8   2 52  +  71 28 23   +46 38 42                          +   594.687
  8   2 53  +  76 12  6   +45  6 43                          +   586.357
  8   2 54  +  80 39 51   +43 22 10                          +   578.959
  8   2 55  +  84 51 35   +41 26 23                          +   572.535
  8   2 56  +  88 47 45   +39 20 39                          +   567.125
  8   2 57  +  92 29 14   +37  6 12                          +   562.761
  8   2 58  +  95 57  4   +34 44  9                          +   559.475
  8   2 59  +  99 12 25   +32 15 33                          +   557.291
  8   3  0  + 102 16 32   +29 41 18                          +   556.230
  8   3  1  + 105 10 40   +27  2 15                          +   556.306
  8   3  2  + 107 55 58   +24 19  8                          +   557.529
```

8	3	3	+110	33	34	+21	32	40	+	559.903	
8	3	4	+113	4	32	+18	43	25	+	563.422	
8	3	5	+115	29	52	+15	51	59	+	568.080	
8	3	6	+117	50	29	+12	58	51	+	573.861	
8	3	7	+120	7	16	+10	4	29	+	580.741	
8	3	8	+122	21	2	+ 7	9	20	+	588.695	
8	3	9	+124	32	34	+ 4	13	49	+	597.688	
8	3	10	+126	42	35	+ 1	18	18	+	607.678	
8	3	11	+128	51	52	- 1	36	49	+	618.622	
8	3	12	+131	1	4	- 4	31	12	+	630.469	
8	3	13	+133	10	54	- 7	24	28	+	643.162	
8	3	14	+135	22	5	-10	16	17	+	656.641	
8	3	15	+137	35	20	-13	6	17	+	670.843	
8	3	16	+139	51	22	-15	54	6	+	685.700	
8	3	17	+142	10	56	-18	39	23	+	701.141	
8	3	18	+144	34	40	-21	21	43	+	717.093	
8	3	19	+147	3	49	-24	0	41	+	733.482	
8	3	20	+149	38	49	-26	35	51	+	750.232	
8	3	21	+152	20	41	-29	6	44	+	767.265	
8	3	22	+155	10	20	-31	32	48	+	784.506	
8	3	23	+158	8	41	-33	53	30	+	801.875	
8	3	24	+161	16	42	-36	8	18	+	819.298	
8	3	25	+164	35	18	-38	16	[illegible]	+	836.698	
8	3	26	+168	5	16	-40	16	4[illegible]	+	854.003	
8	3	27	+171	47	20	-42	8	5[illegible]	+	871.138	
8	3	28	+175	42	1	-43	52	[illegible]	+	888.036	
8	3	29	+179	49	31	-45	25	14	+	904.628	
8	3	30	-175	50	20	-46	47	25	+	920.849	
8	3	31	-171	18	12	-47	57	4[illegible]	+	936.638	
8	3	32	-166	35	17	-48	55	2[illegible]	+	951.934	
8	3	33	-161	43	21	-49	39	3[illegible]	+	966.683	
8	3	34	-156	44	47	-50	9	4[illegible]	+	980.833	
8	3	35	-151	42	19	-50	25	[illegible]	+	994.334	
8	3	36	-146	39	6	-50	27	[illegible]	+	1007.140	
8	3	37	-141	38	14	-50	13	5[illegible]	+	1019.210	
8	3	38	-136	42	45	-49	46	5[illegible]	+	1030.506	
8	3	39	-131	55	14	-49	6	2[illegible]	+	1040.992	
8	3	40	-127	17	50	-48	13	3[illegible]	+	1050.638	
8	3	41	-122	52	8	-47	8	2[illegible]	+	1059.416	
8	3	42	-118	39	5	-45	52	4[illegible]	+	1067.302	TWILIGHT
8	3	43	-114	39	7	-44	27	20	+	1074.276	TWILIGHT
8	3	44	-110	52	18	-42	53	[illegible]	+	1080.321	TWILIGHT

```
  8   3 45 -107 18 17   -41 10 46                          + 1085.424  TWILIGHT
  8   3 46 -103 56 30   -39 21 28                          + 1089.573  TWILIGHT
  8   3 47 -100 46 12   -37 25 52                          + 1092.763  TWILIGHT
  8   3 48 - 97 46 33   -35 24 43                          + 1094.989  TWILIGHT
  8   3 49 - 94 56 38   -33 18 38                          + 1096.250  TWILIGHT
  8   3 50 - 92 15 35   -31  8 11                          + 1096.550
  8   3 51 - 89 42 29   -28 53 53                          + 1095.892
  8   3 52 - 87 16 30   -26 36 10                          + 1094.287
  8   3 53 - 84 56 47   -24 15 26                          + 1091.744
  8   3 54 - 82 42 35   -21 52  1                          + 1088.277
  8   3 55 - 80 33 10   -19 26 15                          + 1083.902
  8   3 56 - 78 27 50   -16 58 25                          + 1078.639
LIMAPU 124   8   3 56 38.400   523.6817    1157.653     NE
  8   3 57 - 76 25 55   -14 28 45                          + 1072.508
  8   3 58 - 74 26 49   -11 57 30                          + 1065.532
LIMAPU 124   8   3 58   4.094   E18.8592    1116.150     NE          **
  8   3 59 - 72 29 56   - 9 24 53                          + 1057.738
  8   4  0 - 70 34 41   - 6 51  6                          + 1049.154
  8   4  1 - 68 40 30   - 4 16 20                          + 1039.807
  8   4  2 - 66 46 51   - 1 40 48                          + 1029.733
   8   4   2 38   LONG.   - 65 33 25   PASS NO.   363 + 1022.775
  8   4  3 - 64 53 11   + 0 55 19                          + 1018.963
  8   4  4 - 62 58 56   + 3 31 50                          + 1007.533
  8   4  5 - 61  3 33   + 6  8 32                          +  995.481
  8   4  6 - 59  6 27   + 8 45 14                          +  982.846
  8   4  7 - 57  7  0   +11 21 40                          +  969.668
  8   4  8 - 55  4 36   +13 57 38                          +  955.989
  8   4  9 - 52 58 34   +16 32 50                          +  941.853
PANTIG 120   8   4   9 13.656   E53.0088    1414.148     NE          **
  8   4 10 - 50 48  9   +19  6 59                          +  927.305
  8   4 11 - 48 32 35   +21 39 45                          +  912.391
  8   4 12 - 46 11  2   +24 10 45                          +  897.158
  8   4 13 - 43 42 33   +26 39 34                          +  881.656
  8   4 14 - 41  6 12   +29  5 41                          +  865.934
  8   4 15 - 38 20 53   +31 28 35                          +  850.042
  8   4 16 - 35 25 29   +33 47 36                          +  834.034
  8   4 17 - 32 18 50   +36  2  0                          +  817.961
  8   4 18 - 28 59 42   +38 10 59                          +  801.877
  8   4 19 - 25 26 56   +40 13 34                          +  785.838
  8   4 20 - 21 39 25   +42  8 42                          +  769.898
  8   4 21 - 17 36 15   +43 55 14                          +  754.113
  8   4 22 - 13 16 50   +45 31 51                          +  738.541
```

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  8   4 23 -   8 41   0  +46 57 12                          +   723.237
HDLBRG 101   8   4 25 19.004   W34.5484     817.533     NE          **
  8   4 24 -   3 49 15  +48  9 54                          +   708.260
  8   4 25 +   1 17  9  +49  8 33                          +   693.666  TWILIGHT
  8   4 26 +   6 36  4  +49 51 55                          +   679.513  TWILIGHT
HDLBRG 101   8   4 26 23.191   N 6.8608     677.986     NE
  8   4 27 +  12  4 30  +50 18 55                          +   665.860  TWILIGHT
  8   4 28 +  17 38 43  +50 28 47                          +   652.761  TWILIGHT
  8   4 29 +  23 14 29  +50 21  6                          +   640.275  TWILIGHT
  8   4 30 +  28 47 25  +49 55 51                          +   628.455
  8   4 31 +  34 13 28  +49 13 26                          +   617.357
  8   4 32 +  39 29  7  +48 14 34                          +   607.033
HDLBRG 101   8   4 30 46.781   E72.0163    1811.765     SE          **
  8   4 33 +  44 31 42  +47  0 17                          +   597.533
  8   4 34 +  49 19 24  +45 31 46                          +   588.907
  8   4 35 +  53 51 16  +43 50 21                          +   581.200
  8   4 36 +  58  7  5  +41 57 22                          +   574.455
  8   4 37 +  62  7 13  +39 54  6                          +   568.711
  8   4 38 +  65 52 23  +37 41 48                          +   564.005
  8   4 39 +  69 23 37  +35 21 38                          +   560.368
  8   4 40 +  72 42  5  +32 54 35                          +   557.826
  8   4 41 +  75 49  0  +30 21 46                          +   556.402
  8   4 42 +  78 45 36  +27 43 53                          +   556.112
  8   4 43 +  81 33  5  +25  1 46                          +   556.968
  8   4 44 +  84 12 35  +22 16  5                          +   558.973
  8   4 45 +  86 45 11  +19 27 30                          +   562.128
  8   4 46 +  89 11 54  +16 36 33                          +   566.425
  8   4 47 +  91 33 41  +13 43 46                          +   571.851
  8   4 48 +  93 51 23  +10 49 41                          +   578.385
  8   4 49 +  96  5 53  + 7 54 40                          +   586.003
  8   4 50 +  98 17 56  + 4 59 11                          +   594.670
  8   4 51 +100 28 18  + 2  3 36                          +   604.350
  8   4 52 +102 37 44  - 0 51 43                          +   614.999
  8   4 53 +104 46 54  - 3 46 28                          +   626.566
  8   4 54 +106 56 33  - 6 39 58                          +   638.999
  8   4 55 +109  7 21  - 9 32 14                          +   652.237
  8   4 56 +111 20  3  -12 22 46                          +   666.219
  8   4 57 +113 35 20  -15 11 17                          +   680.877
  8   4 58 +115 53 57  -17 57 15                          +   696.142
  8   4 59 +118 16 42  -20 40 25                          +   711.942
  8   5  0 +120 44 21  -23 20 20                          +   728.202
  8   5  1 +123 17 48  -25 56 34                          +   744.846
```

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  8   5   2 +125 57 52   -28 28 38                          +  761.799
  8   5   3 +128 45 30   -30 56  2                          +  778.982
OOMERA 119   8   5   3   4.007   W48.8400    1110.690     SE        **
  8   5   4 +131 41 36   -33 18 12                          +  796.318
  8   5   5 +134 47  9   -35 34 31                          +  813.732
OOMERA 119   8   5   5 36.875   S42.6722    1071.059     SE
  8   5   6 +138  3  1   -37 44 18                          +  831.147
  8   5   7 +141 30  6   -39 46 50                          +  848.488
  8   5   8 +145  9  7   -41 41 19                          +  865.683
  8   5   9 +149  0 39   -43 26 54                          +  882.662
  8   5  10 +153  5  0   -45  2 41                          +  899.356
  8   5  11 +157 22  3   -46 27 44                          +  915.700
  8   5  12 +161 51 21   -47 41 10                          +  931.630
  8   5  13 +166 31 46   -48 42  6                          +  947.087
  8   5  14 +171 21 43   -49 29 47                          +  962.013
  8   5  15 +176 18 58   -50  3 34                          +  976.356
  8   5  16 -178 39 12   -50 23  3                          +  990.065
  8   5  17 -173 35 47   -50 28  1                          + 1003.094
  8   5  18 -168 33 58   -50 18 33                          + 1015.400
  8   5  19 -163 36 48   -49 54 58                          + 1026.944
  8   5  20 -158 47  0   -49 17 47                          + 1037.689
  8   5  21 -154  6 52   -48 27 45                          + 1047.604
  8   5  22 -149 38  4   -47 25 43                          + 1056.660
  8   5  23 -145 21 44   -46 12 39                          + 1064.831  TWILIGHT
  8   5  24 -141 18 27   -44 49 32                          + 1072.098  TWILIGHT
  8   5  25 -137 28 21   -43 17 19                          + 1078.441  TWILIGHT
  8   5  26 -133 51  9   -41 36 57                          + 1083.845  TWILIGHT
  8   5  27 -130 26 22   -39 49 19                          + 1088.300  TWILIGHT
  8   5  28 -127 13 16   -37 55 13                          + 1091.797  TWILIGHT
  8   5  29 -124 11  1   -35 55 23                          + 1094.332  TWILIGHT
  8   5  30 -121 18 46   -33 50 28                          + 1095.904  TWILIGHT
  8   5  31 -118 35 35   -31 41  3                          + 1096.513
  8   5  32 -116  0 35   -29 27 40                          + 1096.163
  8   5  33 -113 32 54   -27 10 45                          + 1094.863
  8   5  34 -111 11 42   -24 50 44                          + 1092.623
  8   5  35 -108 56 13   -22 27 58                          + 1089.454
  8   5  36 -106 45 41   -20  2 47                          + 1085.373
  8   5  37 -104 39 24   -17 35 27                          + 1080.397
  8   5  38 -102 36 43   -15  6 14                          + 1074.547
  8   5  39 -100 36 59   -12 35 22                          + 1067.845
  8   5  40 - 98 39 37   -10  3  6                          + 1060.316
  8   5  41 - 96 44  2   - 7 29 36                          + 1051.987
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  8   5 42 - 94 49 40   - 4 55  6                                  + 1042.888
  8   5 43 - 92 55 57   - 2 19 46                                  + 1033.050
   8   5 43 53  LONG.   - 91 14  8  PASS NO.   364 + 1023.599
  8   5 44 - 91  2 22   + 0 16 11                                  + 1022.505
  8   5 45 - 89  8 21   + 2 52 35                                  + 1011.289
  8   5 46 - 87 13 19   + 5 29 14                                  +  999.439
2RSTON  99  8  5 46 17.117  S88.1968    3498.326     NE
  8   5 47 - 85 16 45   + 8  5 54                                  +  986.992
  8   5 48 - 83 17 59   +10 42 23                                  +  973.989
  8   5 49 - 81 16 26   +13 18 27                                  +  960.472
CPCAN1 107  8  5 49 19.483  S67.4724    1922.795     NE
  8   5 50 - 79 11 25   +15 53 50                                  +  946.483
BELVOR 113  8  5 50 57.268  S79.3110    2578.024     NE
PNSTAT  96  8  5 50 36.978  S83.2392    2905.787     NE
  8   5 51 - 77  2 13   +18 28 14                                  +  932.066
PDRSPG 117  8  5 51 40.877  S70.3852    2004.123     NE
ABDEEN 112  8  5 51 26.025  S78.7827    2525.449     NE
  8   5 52 - 74 48  4   +21  1 20                                  +  917.268
FTMONM 104  8  5 52 20.098  S76.7203    2355.747     NE
  8   5 53 - 72 28  9   +23 32 47                                  +  902.136
LINCON 105  8  5 53 24.100  S76.5398    2312.996     NE
  8   5 54 - 70  1 34   +26  2  8                                  +  886.717
CPCAN1 107  8  5 54 53.502  E62.8221    1601.549     NE         **
  8   5 55 - 67 27 21   +28 28 57                                  +  871.062
  8   5 56 - 64 44 28   +30 52 40                                  +  855.220
  8   5 57 - 61 51 48   +33 12 42                                  +  839.244
PDRSPG 117  8  5 57 53.828  E69.3231    1782.378     NE         **
ARKANS 109  8  5 57 47.525  E87.7551    3111.602     NE         **
2RSTON  99  8  5 57 38.461  E83.4991    2711.604     NE         **
  8   5 58 - 58 48 10   +35 28 18                                  +  823.186
  8   5 59 - 55 32 24   +37 38 42                                  +  807.099
BELVOR 113  8  5 59 30.027  E78.8290    2280.623     NE         **
ABDEEN 112  8  5 59 52.604  E78.9749    2278.655     NE         **
  8   6  0 - 52  3 18   +39 42 58                                  +  791.037
FTMONM 104  8  6  0 16.129  E78.0435    2200.964     NE         **
PNSTAT  96  8  6  0 32.691  E83.1727    2583.991     NE         **
  8   6  1 - 48 19 43   +41 40  5                                  +  775.057
LINCON 105  8  6  1 30.534  E80.0032    2299.441     NE         **
  8   6  2 - 44 20 42   +43 28 54                                  +  759.212
  8   6  3 - 40  5 32   +45  8  8                                  +  743.562
  8   6  4 - 35 33 59   +46 36 29                                  +  728.161
HDLBRG 101  8  6  6 34.436  W84.2219    2471.534     NE         **
```

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  8   6   5  -  30  46  19   +47  52  32                          +   713.068
  8   6   6  -  25  43  36   +48  54  54                          +   698.339  TWILIGHT
  8   6   7  -  20  27  43   +49  42  18                          +   684.033  TWILIGHT
  8   6   8  -  15   1  29   +50  13  35                          +   670.206  TWILIGHT
  8   6   9  -   9  28  27   +50  27  55                          +   656.917  TWILIGHT
  8   6  10  -   3  52  45   +50  24  46                          +   644.221  TWILIGHT
  8   6  11  +   1  41  15   +50   4   2                          +   632.175  TWILIGHT
  8   6  12  +   7   9  22   +49  26   0                          +   620.833
HOLBRG 101   8   6  12 17.271   S 2.4552     617.645     SE
  8   6  13  +  12  27  56   +48  31  18                          +   610.248
  8   6  14  +  17  34   2   +47  20  54                          +   600.473
HOLBRG 101   8   6  12   2.399   W 4.0499     577.638     SE          **
  8   6  15  +  22  25  39   +45  55  57                          +   591.556
  8   6  16  +  27   1  38   +44  17  46                          +   583.543
  8   6  17  +  31  21  34   +42  27  39                          +   576.480
  8   6  18  +  35  25  41   +40  26  56                          +   570.407
  8   6  19  +  39  14  37   +38  16  53                          +   565.361
  8   6  20  +  42  49  20   +35  58  39                          +   561.375
  8   6  21  +  46  11   0   +33  33  20                          +   558.477
  8   6  22  +  49  20  47   +31   1  54                          +   556.691
  8   6  23  +  52  19  56   +28  25  15                          +   556.036
  8   6  24  +  55   9  40   +25  44   9                          +   556.524
  8   6  25  +  57  51   8   +22  59  19                          +   558.161
  8   6  26  +  60  25  26   +20  11  25                          +   560.950
  8   6  27  +  62  53  36   +17  21   1                          +   564.884
  8   6  28  +  65  16  35   +14  28  40                          +   569.953
  8   6  29  +  67  35  17   +11  34  50                          +   576.138
  8   6  30  +  69  50  32   +  8  40   0                          +   583.415
  8   6  31  +  72   3  11   +  5  44  34                          +   591.754
  8   6  32  +  74  13  56   +  2  48  56                          +   601.119
  8   6  33  +  76  23  34   -  0   6  30                          +   611.467
  8   6  34  +  78  32  46   -  3   1  23                          +   622.750
  8   6  35  +  80  42  16   -  5  55  21                          +   634.916
  8   6  36  +  82  52  45   -  8  48   2                          +   647.908
  8   6  37  +  85   4  55   -11  39   6                          +   661.663
  8   6  38  +  87  19  29   -14  28  10                          +   676.115
  8   6  39  +  89  37  13   -17  14  54                          +   691.198
  8   6  40  +  91  58  53   -19  58  53                          +   706.837
  8   6  41  +  94  25  15   -22  39  43                          +   722.960
  8   6  42  +  96  57  11   -25  16  59                          +   739.492
  8   6  43  +  99  35  31   -27  50  13                          +   756.356
  8   6  44  + 102  21  11   -30  18  54  142                     +   773.474
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8	6	45	+105	15	6	-32	42	30	+	790.770	
8	6	46	+108	18	13	-35	0	24	+	808.167	
8	6	47	+111	31	27	-37	11	58	+	825.588	
8	6	48	+114	55	40	-39	16	27	+	842.960	
8	6	49	+118	31	40	-41	13	6	+	860.208	
8	6	50	+122	20	4	-43	1	3	+	877.261	
8	6	51	+126	21	14	-44	39	26	+	894.051	
8	6	52	+130	35	12	-46	7	19	+	910.510	
8	6	53	+135	1	33	-47	23	47	+	926.576	
8	6	54	+139	39	23	-48	27	58	+	942.187	
8	6	55	+144	27	13	-49	19	4	+	957.285	
8	6	56	+149	22	56	-49	56	24	+	971.816	
8	6	57	+154	23	59	-50	19	31	+	985.729	
8	6	58	+159	27	23	-50	28	8	+	998.977	
8	6	59	+164	29	57	-50	22	17	+	1011.515	
8	7	0	+169	28	39	-50	2	11	+	1023.303	
8	7	1	+174	20	35	-49	28	20	+	1034.303	
8	7	2	+179	3	23	-48	41	25	+	1044.484	
8	7	3	-176	24	48	-47	42	18	+	1053.815	
8	7	4	-172	5	13	-46	31	53	+	1062.270	TWILIGHT
8	7	5	-167	58	37	-45	11	10	+	1069.825	TWILIGHT
8	7	6	-164	5	12	-43	41	7	+	1076.464	TWILIGHT
8	7	7	-160	24	48	-42	2	42	+	1082.169	TWILIGHT
8	7	8	-156	56	58	-40	16	47	+	1086.928	TWILIGHT
8	7	9	-153	41	0	-38	24	13	+	1090.732	TWILIGHT
8	7	10	-150	36	7	-36	25	44	+	1093.576	TWILIGHT
8	7	11	-147	41	27	-34	22	1	+	1095.458	TWILIGHT
8	7	12	-144	56	5	-32	13	40	+	1096.376	
8	7	13	-142	19	8	-30	1	13	+	1096.335	
8	7	14	-139	49	43	-27	45	9	+	1095.341	
8	7	15	-137	26	59	-25	25	53	+	1093.404	
8	7	16	-135	10	9	-23	3	46	+	1090.535	
8	7	17	-132	58	28	-20	39	10	+	1086.748	
8	7	18	-130	51	12	-18	12	21	+	1082.062	
8	7	19	-128	47	41	-15	43	35	+	1076.495	
8	7	20	-126	47	17	-13	13	8	+	1070.068	
8	7	21	-124	49	25	-10	41	13	+	1062.807	
8	7	22	-122	53	27	- 8	8	2	+	1054.738	
8	7	23	-120	58	50	- 5	33	48	+	1045.889	
8	7	24	-119	5	3	- 2	58	41	+	1036.290	
8	7	25	-117	11	31	- 0	22	54	+	1025.975	
8	7	25	8	LONG.		-116	54	48	PASS NO.	365 +	1024.361

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  8   7 26 -115 17 41   + 2 13 23                                  + 1014.976
  8   7 27 -113 22 59   + 4 49 56                                  + 1003.331
  8   7 28 -111 26 53   + 7 26 35                                  +  991.078
  8   7 29 -109 28 46   +10  3  7                                  +  978.254
  8   7 30 -107 28  1   +12 39 16                                  +  964.903
WHITES 111   8   7 30 21.155  S78.4643    2567.631     NE
  8   7 31 -105 23 58   +15 14 48                                  +  951.065
BOLDER  95   8   7 31  4.434  S84.7372    3063.026     NE
  8   7 32 -103 15 56   +17 49 26                                  +  936.785
  8   7 33 -101  3  9   +20 22 51                                  +  922.109
  8   7 34 - 98 44 49   +22 54 42                                  +  907.082
FTSILL 110   8   7 34  8.510  S62.0118    1623.530     NE
  8   7 35 - 96 20  4   +25 24 35                                  +  891.752
  8   7 36 - 93 47 56   +27 52  2                                  +  876.170
CPCAN1 107   8   7 36  8.687  W62.7044    1599.229     NE          **
  8   7 37 - 91  7 24   +30 16 33                                  +  860.384
ARKANS 109   8   7 37  7.601  S33.7809    1006.566     NE
UWISCN 102   8   7 37 30.920  S64.0740    1611.741     NE
  8   7 38 - 88 17 22   +32 37 32                                  +  844.445
2RSTON  99   8   7 38 32.635  S 6.9802     841.230     NE
UILNOS  97   8   7 38  1.139  S50.0072    1218.542     NE
WHITES 111   8   7 38 27.980  E75.2156    2118.103     NE          **
FTSILL 110   8   7 38 53.090  E61.6556    1494.195     NE          **
2RSTON  99   8   7 38 53.647  E 7.5392     836.498     NE          **
  8   7 39 - 85 16 42   +34 54 18                                  +  828.408
PORSPG 117   8   7 39  9.076  W51.2810    1219.670     NE          **
ARKANS 109   8   7 39  2.731  E35.7795     991.454     NE          **
GOLDST 103   8   7 39 12.845  E88.4716    3181.076     NE          **
  8   7 40 - 82  4 12   +37  6  4                                  +  812.323
CPCAN1 107   8   7 40 26.097  N60.0548    1404.534     NE
BPOINT 126   8   7 40 37.509  W19.4831     845.122     NE          **
BELVOR 113   8   7 40 45.254  W16.2880     829.718     NE          **
LANGLY 106   8   7 39 59.874  W35.7751     973.499     NE          **
  8   7 41 - 78 38 40   +39 11 57                                  +  796.246
BPOINT 126   8   7 41 25.835  N14.4443     812.129     NE
PORSPG 117   8   7 41 51.275  N43.1622    1025.487     NE
BELVOR 113   8   7 41 25.134  N11.9006     804.890     NE
ABDEEN 112   8   7 41 42.376  N10.1461     795.989     NE
LANGLY 106   8   7 41 37.226  N28.1796     878.352     NE
PNSTAT  96   8   7 41 12.898  S10.5372     804.475     NE
ABDEEN 112   8   7 41  7.934  W14.4098     816.939     NE          **
FTMONM 104   8   7 41 31.438  W18.4250     825.401     NE          **
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UILNOS  97  8  7 41 26.803  E56.3958    1281.171    NE          **
PNSTAT  96  8  7 41 47.897  E14.4786     805.843    NE          **
BOLDER  95  8  7 41 27.462  E83.7584    2646.215    NE          **
                                                     +   780.231
  8  7 42 - 74 58 56  +41 10 57
LINCON 105  8  7 42 53.464  N 1.9623     766.446    NE
FTMONM 104  8  7 42 14.841  N12.5282     793.086    NE
LINCON 105  8  7 42 45.781  W 3.5837     769.417    NE          **
                                                     +   764.333
  8  7 43 - 71  4  2  +43  1 57
UWISCN 102  8  7 43  1.354  E71.5581    1776.932    NE          **
                                                     +   748.611
  8  7 44 - 66 53  8  +44 43 45                      +   733.119
  8  7 45 - 62 25 51  +46 14 59                      +   717.916
  8  7 46 - 57 42 19  +47 34 17                      +   703.059
  8  7 47 - 52 43 24  +48 40 17                      +   688.604   TWILIGHT
  8  7 48 - 47 30 46  +49 31 37                      +   674.611   TWILIGHT
  8  7 49 - 42  6 58  +50  7  8                      +   661.137   TWILIGHT
  8  7 50 - 36 35 23  +50 25 53                      +   648.238   TWILIGHT
  8  7 51 - 31  0  3  +50 27 16                      +   635.971   TWILIGHT
  8  7 52 - 25 25 17  +50 11  3                      +   624.391
  8  7 53 - 19 55 20  +49 37 26                      +   613.551
  8  7 54 - 14 34  3  +48 46 58                      +   603.504
  8  7 55 -  9 24 33  +47 40 32
HOLBRG 101  8  7 53 17.646  W83.1014    3769.171    SE          **
                                                     +   594.300
  8  7 56 -  4 29  6  +46 19 14                      +   585.987
  8  7 57 +  0 10 57  +44 44 22                      +   578.610
  8  7 58 +  4 35  0  +42 57 13                      +   572.211
  8  7 59 +  8 43  8  +40 59  8
HOLBRG 101  8  7 58 59.822  S63.9598    1131.633    SE
                                                     +   566.828
  8  8  0 + 12 35 53  +38 51 24                      +   562.496
  8  8  1 + 16 14 11  +36 35 11                      +   559.244
  8  8  2 + 19 39  6  +34 11 37                      +   557.098
  8  8  3 + 22 51 50  +31 41 41                      +   556.078
  8  8  4 + 25 53 37  +29  6 18                      +   556.198
  8  8  5 + 28 45 41  +26 26 17                      +   557.467
  8  8  6 + 31 29 12  +23 42 21                      +   559.889
  8  8  7 + 34  5 16  +20 55 10                      +   563.459
  8  8  8 + 36 34 56  +18  5 21                      +   568.168
  8  8  9 + 38 59 11  +15 13 27                      +   574.001
  8  8 10 + 41 18 56  +12 19 56                      +   580.935
  8  8 11 + 43 35  1  + 9 25 17                      +   588.942
  8  8 12 + 45 48 17  + 6 29 56                      +   597.987
  8  8 13 + 47 59 29  + 3 34 18                      +   608.029
  8  8 14 + 50  9 22  + 0 38 45
```

8	8	15	+	52	18	38	-	2	16	21	+ 619.022
8	8	16	+	54	28	2	-	5	10	37	+ 630.917
8	8	17	+	56	38	12	-	8	3	43	+ 643.655
8	8	18	+	58	49	55	+	10	55	16	+ 657.176
8	8	19	+	61	3	50	+	13	44	56	+ 671.417
8	8	20	+	63	20	44	+	16	32	21	+ 686.308
8	8	21	+	65	41	21	+	19	17	7	+ 701.780
8	8	22	+	68	6	29	+	21	58	51	+ 717.759
8	8	23	+	70	36	57	+	24	37	7	+ 734.171
8	8	24	+	73	13	37	+	27	11	28	+ 750.938
8	8	25	+	75	57	23	+	29	41	25	+ 767.984
8	8	26	+	78	49	10	+	32	6	25	+ 785.232
8	8	27	+	81	49	55	+	34	25	52	+ 802.605
8	8	28	+	85	0	33	+	36	39	9	+ 820.026
8	8	29	+	88	21	57	+	38	45	33	+ 837.420
8	8	30	+	91	54	59	+	40	44	18	+ 854.714
8	8	31	+	95	40	16	+	42	34	34	+ 871.835
8	8	32	+	99	38	15	+	44	15	29	+ 888.714
8	8	33	+	103	49	5	+	45	46	9	+ 905.283
8	8	34	+	108	12	27	+	47	5	37	+ 921.478
8	8	35	+	112	47	36	+	48	13	0	+ 937.236
8	8	36	+	117	33	10	+	49	7	28	+ 952.501
8	8	37	+	122	27	13	+	49	48	20	+ 967.216
8	8	38	+	127	27	16	+	50	15	4	+ 981.328
8	8	39	+	132	30	27	+	50	27	21	+ 994.789
8	8	40	+	137	33	37	+	50	25	6	+ 1007.555
8	8	41	+	142	33	38	+	50	8	32	+ 1019.583
8	8	42	+	147	27	34	+	49	38	4	+ 1030.836
8	8	43	+	152	12	55	+	48	54	20	+ 1041.279
8	8	44	+	156	47	41	+	47	58	10	+ 1050.882
8	8	45	+	161	10	27	+	46	50	29	+ 1059.617
8	8	46	+	165	20	22	+	45	32	14	+ 1067.461 TWILIGHT
8	8	47	+	169	17	6	+	44	4	24	+ 1074.392 TWILIGHT
8	8	48	+	173	0	45	+	42	27	58	+ 1080.396 TWILIGHT
8	8	49	+	176	31	42	+	40	43	50	+ 1085.458 TWILIGHT
8	8	50	+	179	50	34	+	38	52	50	+ 1089.569 TWILIGHT
8	8	51	-	177	1	52	+	36	55	45	+ 1092.721 TWILIGHT
8	8	52	-	174	4	44	+	34	53	17	+ 1094.912 TWILIGHT
8	8	53	-	171	17	7	+	32	46	2	+ 1096.139
8	8	54	-	168	38	9	+	30	34	33	+ 1096.407
8	8	55	-	166	6	56	+	28	19	21	+ 1095.721
8	8	56	-	163	42	37	+	26	0	50	+ 1094.087

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  8   8 57 -161 24 24   -23 39 24                                  + 1091.518
  8   8 58 -159 11 30   -21 15 24                                  + 1088.029
  8   8 59 -157  3 12   -18 49  7                                  + 1083.633
  8   9  0 -154 58 50   -16 20 50                                  + 1078.351
  8   9  1 -152 57 44   -13 50 48                                  + 1072.203
  8   9  2 -150 59 18   -11 19 15                                  + 1065.212
  8   9  3 -149  2 56   - 8 46 23                                  + 1057.405
  8   9  4 -147  8  4   - 6 12 25                                  + 1048.809
  8   9  5 -145 14  9   - 3 37 32                                  + 1039.453
  8   9  6 -143 20 37   - 1  1 56                                  + 1029.370
   8   9  6 23  LONG.   -142 35 29  PASS NO.  366 + 1025.092
  8   9  7 -141 26 56   + 1 34 13                                  + 1018.593
  8   9  8 -139 32 33   + 4 10 41                                  + 1007.158
  8   9  9 -137 36 53   + 6 47 18                                  +  995.101
  8   9 10 -135 39 21   + 9 23 50                                  +  982.462
  8   9 11 -133 39 21   +12  0  3                                  +  969.280
  8   9 12 -131 36 15   +14 35 44                                  +  955.599
  8   9 13 -129 29 19   +17 10 34                                  +  941.461
  8   9 14 -127 17 52   +19 44 17                                  +  926.911
  8   9 15 -125  1  3   +22 16 31                                  +  911.994
  8   9 16 -122 38  3   +24 46 54                                  +  896.760
STNFDU  98  8  9 16 11.548  S64.4544   1694.277     NE
  8   9 17 -120  7 55   +27 14 58                                  +  881.255
  8   9 18 -117 29 40   +29 40 14                                  +  865.530
NELCAL 121  8  9 18 11.271  S19.9858    910.677     NE
GOLDST 103  8  9 18 13.991  S38.0444   1055.705     NE
  8   9 19 -114 42 13   +32  2  8                                  +  849.636
NELCAL 121  8  9 19 13.852  E20.4162    895.438     NE          **
WHITES 111  8  9 19 43.227  W37.0281   1017.208     NE          **
  8   9 20 -111 44 25   +34 19 59                                  +  833.625
FTSILL 110  8  9 20  8.379  W61.9506   1505.622     NE          **
ARKANS 109  8  9 20 18.019  W75.2659   2105.418     NE          **
GOLDST 103  8  9 20 28.092  E40.2649   1040.093     NE          **
2RSTON  99  8  9 20  8.997  W81.1566   2521.165     NE          **
  8   9 21 -108 35  6   +36 33  4                                  +  817.548
WHITES 111  8  9 21 33.269  N32.4371    937.185     NE
BOLDER  95  8  9 21 59.451  S13.1168    818.863     NE
STNFDU  98  8  9 21 24.226  E65.9508   1615.041     NE          **
  8   9 22 -105 13  4   +38 40 30                                  +  801.461
BELVOR 113  8  9 22  0.584  W83.8705   2685.910     NE          **
ABDEEN 112  8  9 22 23.202  W83.4185   2633.464     NE          **
FTMONM 104  8  9 22 46.644  W83.8337   2656.373     NE          **
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UILNOS  97  8  9 22 42.050  W64.5489   1527.115     NE        **
BOLDER  95  8  9 22 42.730  E17.3676    821.587     NE        **
  8  9 23 -101 37  9  +40 41 19                      +   785.418
FTSILL 110  8  9 23 50.172  N53.0767   1180.729     NE
PNSTAT  96  8  9 23  3.247  W78.5926   2233.676     NE        **
  8  9 24 - 97 46 16  +42 34 26                      +   769.474
LINCON 105  8  9 24  1.131  W81.0526   2383.728     NE        **
UWISCN 102  8  9 24 16.684  W40.7986    972.759     NE        **
  8  9 25 - 93 39 35  +44 18 40                      +   753.686
ARKANS 109  8  9 25 39.884  N63.7993   1421.893     NE
UWISCN 102  8  9 25 54.531  N24.1908    801.956     NE
  8  9 26 - 89 16 35  +45 52 43                      +   738.109
2RSTON  99  8  9 26 33.855  N68.6851   1581.132     NE
UILNOS  97  8  9 26 13.667  N47.3268   1024.309     NE
  8  9 27 - 84 37 15  +47 15 11                      +   722.803
CPCAN1 107  8  9 27 49.166  N83.2761   2432.432     NE
  8  9 28 - 79 42 15  +48 24 42                      +   707.822
PDRSPG 117  8  9 28 48.719  N73.9376   1766.464     NE
BELVOR 113  8  9 28 30.097  N64.7703   1381.777     NE
ABDEEN 112  8  9 28 42.374  N63.0602   1321.164     NE
PNSTAT  96  8  9 28 21.486  N57.0505   1165.902     NE
  8  9 29 - 74 33  0  +49 19 54                      +   693.227  TWILIGHT
LINCON 105  8  9 29 34.346  N54.1707   1077.506     NE
FTMONM 104  8  9 29  5.816  N61.7417   1272.161     NE
  8  9 30 - 69 11 52  +49 59 34                      +   679.073  TWILIGHT
  8  9 31 - 63 42  2  +50 22 42                      +   665.420  TWILIGHT
  8  9 32 - 58  7 20  +50 28 35                      +   652.324  TWILIGHT
  8  9 33 - 52 32  4  +50 16 54                      +   639.841  TWILIGHT
  8  9 34 - 47  0 34  +49 47 45                      +   628.028
  8  9 35 - 41 36 47  +49  1 34                      +   616.938
  8  9 36 - 36 24  4  +47 59 10                      +   606.625
  8  9 37 - 31 24 51  +46 41 36                      +   597.139
  8  9 38 - 26 40 47  +45 10  8                      +   588.530
  8  9 39 - 22 12 36  +43 26  3                      +   580.843
  8  9 40 - 18  0 26  +41 30 41                      +   574.121
  8  9 41 - 14  3 47  +39 25 20                      +   568.405
  8  9 42 - 10 21 51  +37 11 13                      +   563.729
  8  9 43 -  6 53 36  +34 49 28                      +   560.126
  8  9 44 -  3 37 51  +32 21  6                      +   557.621
  8  9 45 -  0 33 20  +29 47  3                      +   556.237
  8  9 46 +  2 21  9  +27  8  9                      +   555.990
  8  9 47 +  5  6 46  +24 25  9                      +   556.891
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8	9	48	+	7	44	40	+21	38	45	+	558.944	
8	9	49	+	10	15	55	+18	49	34	+	562.149	
8	9	50	+	12	41	29	+15	58	7	+	566.498	
8	9	51	+	15	2	20	+13	4	58	+	571.976	
8	9	52	+	17	19	18	+10	10	33	+	578.563	
8	9	53	+	19	33	15	+ 7	15	19	+	586.234	
8	9	54	+	21	44	56	+ 4	19	41	+	594.955	
8	9	55	+	23	55	6	+ 1	24	2	+	604.686	
8	9	56	+	26	4	30	- 1	31	15	+	615.385	
8	9	57	+	28	13	49	- 4	25	48	+	627.001	
8	9	58	+	30	23	46	- 7	19	16	+	639.479	
8	9	59	+	32	35	2	-10	11	18	+	652.761	
8	10	0	+	34	48	22	-13	1	32	+	666.783	
8	10	1	+	37	4	28	-15	49	36	+	681.477	
8	10	2	+	39	24	6	-18	35	7	+	696.774	
8	10	3	+	41	48	2	-21	17	43	+	712.602	
8	10	4	+	44	17	6	-23	56	58	+	728.885	
8	10	5	+	46	52	10	-26	32	25	+	745.548	
8	10	6	+	49	34	5	-29	3	35	+	762.515	
8	10	7	+	52	23	47	-31	29	56	+	779.707	
8	10	8	+	55	22	12	-33	50	55	+	797.048	
8	10	9	+	58	30	18	-36	5	52	+	814.462	
8	10	10	+	61	48	58	-38	14	8	+	831.871	
8	10	11	+	65	19	3	-40	14	56	+	849.203	
8	10	12	+	69	1	14	-42	7	29	+	866.385	
8	10	13	+	72	56	3	-43	50	53	+	883.346	
8	10	14	+	77	3	44	-45	24	15	+	900.019	
8	10	15	+	81	24	4	-46	46	39	+	916.337	
8	10	16	+	85	56	26	-47	57	11	+	932.238	
8	10	17	+	90	39	37	-48	55	0	+	947.663	
8	10	18	+	95	31	50	-49	39	22	+	962.555	
8	10	19	+100	30	43		-50	9	42	+	976.862	
8	10	20	+105	33	29		-50	25	38	+	990.533	
8	10	21	+110	37	2		-50	27	1	+	1003.521	
8	10	22	+115	38	12		-50	14	1	+	1015.786	
8	10	23	+120	33	59		-49	46	58	+	1027.287	
8	10	24	+125	21	46		-49	6	29	+	1037.990	
8	10	25	+129	59	23		-48	13	20	+	1047.861	
8	10	26	+134	25	17		-47	8	25	+	1056.874	
8	10	27	+138	38	31		-45	52	42	+	1065.003	TWILIGHT
8	10	28	+142	38	36		-44	27	10	+	1072.227	TWILIGHT
8	10	29	+146	25	31		-42	52	47	+	1078.528	TWILIGHT

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  8 10 30 +149 59 36   -41 10 28                          + 1083.892  TWILIGHT
  8 10 31 +153 21 26   -39 21  6                          + 1088.307  TWILIGHT
  8 10 32 +156 31 45   -37 25 27                          + 1091.767  TWILIGHT
  8 10 33 +159 31 25   -35 24 15                          + 1094.266  TWILIGHT
  8 10 34 +162 21 19   -33 18  8                          + 1095.804  TWILIGHT
  8 10 35 +165  2 21   -31  7 39                          + 1096.380
  8 10 36 +167 35 25   -28 53 20                          + 1096.001
  8 10 37 +170  1 22   -26 35 36                          + 1094.673
  8 10 38 +172 21  2   -24 14 53                          + 1092.406
  8 10 39 +174 35 11   -21 51 29                          + 1089.213
  8 10 40 +176 44 33   -19 25 46                          + 1085.110
  8 10 41 +178 49 49   -16 57 58                          + 1080.115
  8 10 42 -179  8 20   -14 28 22                          + 1074.247
SAMOAI 114  8 10 42  3.181  W46.2538   1446.623    NE          **
  8 10 43 -177  9 19   -11 57 11                          + 1067.530
  8 10 44 -175 12 30   - 9 24 39                          + 1059.987
  8 10 45 -173 17 20   - 6 50 58                          + 1051.647
  8 10 46 -171 23 15   - 4 16 19                          + 1042.537
SAMOAI 114  8 10 46 21.209  N57.2226   1670.262    NE
  8 10 47 -169 29 42   - 1 40 54                          + 1032.690
   8 10 47 38  LONG.   -168 16 11  PASS NO.  367 + 1025.861
  8 10 48 -167 36  8   + 0 55  5                          + 1022.138
  8 10 49 -165 42  0   + 3 31 28                          + 1010.916
  8 10 50 -163 46 44   + 6  8  1                          +  999.061
  8 10 51 -161 49 46   + 8 44 33                          +  986.610
  8 10 52 -159 50 29   +11 20 51                          +  973.603
BSANDS 100  8 10 52  1.387  S57.8576   1593.505    NE
  8 10 53 -157 48 15   +13 56 38                          +  960.083
  8 10 54 -155 42 24   +16 31 41                          +  946.091
  8 10 55 -153 32 11   +19  5 40                          +  931.673
  8 10 56 -151 16 51   +21 38 15                          +  916.872
BSANDS 100  8 10 56  9.197  E51.1467   1338.561    NE          **
  8 10 57 -148 55 33   +24  9  6                          +  901.738
  8 10 58 -146 27 22   +26 37 45                          +  886.317
  8 10 59 -143 51 19   +29  3 44                          +  870.659
  8 11  0 -141  6 22   +31 26 30                          +  854.814
WHITES 111  8 11  0 58.433  W88.1820   3183.078    NE          **
  8 11  1 -138 11 22   +33 45 24                          +  838.835
GOLDST 103  8 11  1 43.340  W73.8143   2015.136    NE          **
  8 11  2 -135  5  9   +35 59 44                          +  822.773
STNFDU  98  8 11  2 39.473  W55.6422   1296.961    NE          **
  8 11  3 -131 46 32   +38  8 38                          +  806.682
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BOLDER   95  8 11   3 58.059  W78.2454    2220.457     NE         **
  8 11   4 -128 14 20   +40 11 12                      +   790.617
  8 11   5 -124 27 25   +42  6 22                      +   774.632
STNFDU   98  8 11   5 34.465  N44.1359    1017.229     NE
UWISCN  102  8 11   5 32.013  W86.7753    2881.045     NE         **
  8 11   6 -120 24 55   +43 52 57                      +   758.785
GOLDST  103  8 11   6 49.714  N62.1701    1371.825     NE
  8 11   7 -116  6 12   +45 29 42                      +   743.130
  8 11   8 -111 31  6   +46 55 14                      +   727.725
WHITES  111  8 11   8 58.996  N74.4206    1826.529     NE
  8 11   9 -106 40  5   +48  8 11                      +   712.629
BOLDER   95  8 11   9 16.938  N58.2074    1200.911     NE
  8 11  10 -101 34 25   +49  7 10                      +   697.898  TWILIGHT
FTSILL  110  8 11  10 35.936  N76.0365    1870.988     NE
  8 11  11 - 96 16  9   +49 50 55                      +   683.590  TWILIGHT
  8 11  12 - 90 48 17   +50 18 22                      +   669.764  TWILIGHT
ARKANS  109  8 11  12  0.229  N77.2022    1900.709     NE
UWISCN  102  8 11  12 12.053  N55.5841    1079.418     NE
2RSTON   99  8 11  12 44.559  N78.2999    1949.539     NE
UILNOS   97  8 11  12 27.708  N66.3750    1372.317     NE
  8 11  13 - 85 14 31   +50 28 44                      +   656.477  TWILIGHT
CPCAN1  107  8 11  13 49.632  N87.2254    2646.029     SE
  8 11  14 - 79 39  4   +50 21 36                      +   643.784  TWILIGHT
PDRSPG  117  8 11  14 44.468  N77.3425    1834.484     SE
BELVOR  113  8 11  14 26.979  N70.3739    1481.944     SE
ABDEEN  112  8 11  14 38.432  N68.2606    1391.958     SE
PNSTAT   96  8 11  14 19.007  N64.6636    1272.394     SE
  8 11  15 - 74  6 16   +49 56 55                      +   631.743  TWILIGHT
LINCON  105  8 11  15 28.447  N56.1443    1029.927     SE
FTMONM  104  8 11  15  0.617  N65.6419    1290.322     SE
  8 11  16 - 68 40 13   +49 15  4                      +   620.409
  8 11  17 - 63 24 25   +48 16 46                      +   609.835
  8 11  18 - 58 21 35   +47  3  2                      +   600.072
  8 11  19 - 53 33 33   +45 35  3                      +   591.171
  8 11  20 - 49  1 16   +43 54  6                      +   583.178
LINCON  105  8 11  20 41.619  E84.5804    2240.138     SE         **
  8 11  21 - 44 45  0   +42  1 33                      +   576.138
  8 11  22 - 40 44 26   +39 58 41                      +   570.091
  8 11  23 - 36 58 49   +37 46 44                      +   565.074
  8 11  24 - 33 27  8   +35 26 52                      +   561.121
  8 11  25 - 30  8 15   +33  0  7                      +   558.260
  8 11  26 - 27  0 57   +30 27 28                      +   556.513
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  8 11 27 - 24  3 59   +27 49 44                                  +  555.900
  8 11 28 - 21 16 12   +25  7 44                                  +  556.432
  8 11 29 - 18 36 23   +22 22  9                                  +  558.118
  8 11 30 - 16  3 31   +19 33 37                                  +  560.956
  8 11 31 - 13 36 32   +16 42 42                                  +  564.941
  8 11 32 - 11 14 33   +13 49 55                                  +  570.062
  8 11 33 -  8 56 37   +10 55 46                                  +  576.301
  8 11 34 -  6 41 57   + 8  0 40                                  +  583.631
  8 11 35 -  4 29 44   + 5  5  5                                  +  592.023
  8 11 36 -  2 19 13   + 2  9 22                                  +  601.440
SANANA 116  8 11 36 44.063  W 8.3566     614.952     SE               **
  8 11 37 -  0  9 40   - 0 46  5                                  +  611.839
SANANA 116  8 11 37  4.250  S10.9501     622.957     SE
  8 11 38 +  1 59 38   - 3 40 53                                  +  623.172
  8 11 39 +  4  9 23   - 6 34 42                                  +  635.385
  8 11 40 +  6 20 18   - 9 27 11                                  +  648.420
  8 11 41 +  8 33  3   -12 17 57                                  +  662.216
  8 11 42 + 10 48 25   -15  6 39                                  +  676.706
  8 11 43 + 13  7  6   -17 52 55                                  +  691.821
  8 11 44 + 15 29 54   -20 36 21                                  +  707.490
  8 11 45 + 17 57 38   -23 16 33                                  +  723.638
  8 11 46 + 20 31  7   -25 53  3                                  +  740.190
JOBURG 118  8 11 46  3.233  W50.7921    1090.268     SE               **
  8 11 47 + 23 11 15   -28 25 24                                  +  757.069
  8 11 48 + 25 58 56   -30 53  5                                  +  774.198
JOBURG 118  8 11 48 46.277  S48.3853    1110.427     SE
  8 11 49 + 28 55  6   -33 15 32                                  +  791.500
  8 11 50 + 32  0 43   -35 32  8                                  +  808.898
  8 11 51 + 35 16 40   -37 42 13                                  +  826.316
  8 11 52 + 38 43 51   -39 45  2                                  +  843.679
  8 11 53 + 42 22 59   -41 39 47                                  +  860.915
  8 11 54 + 46 14 39   -43 25 37                                  +  877.952
  8 11 55 + 50 19  9   -45  1 38                                  +  894.721
  8 11 56 + 54 36 24   -46 26 55                                  +  911.156
  8 11 57 + 59  5 55   -47 40 34                                  +  927.194
  8 11 58 + 63 46 36   -48 41 41                                  +  942.774
  8 11 59 + 68 36 50   -49 29 30                                  +  957.838
  8 12  0 + 73 34 23   -50  3 25                                  +  972.334
  8 12  1 + 78 36 32   -50 23  0                                  +  986.209
  8 12  2 + 83 40 16   -50 28  2                                  +  999.417
  8 12  3 + 88 42 23   -50 18 37                                  + 1011.913
  8 12  4 + 93 39 52   -49 55  2                                  + 1023.659
```

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  8 12  5 + 98 29 56  -49 17 50                          + 1034.617
  8 12  6 +103 10 19  -48 27 46                          + 1044.755
  8 12  7 +107 39 19  -47 25 42                          + 1054.042
  8 12  8 +111 55 49  -46 12 34                          + 1062.454  TWILIGHT
  8 12  9 +115 59 15  -44 49 22                          + 1069.967  TWILIGHT
  8 12 10 +119 49 27  -43 17  6                          + 1076.564  TWILIGHT
  8 12 11 +123 26 43  -41 36 40                          + 1082.228  TWILIGHT
  8 12 12 +126 51 34  -39 48 58                          + 1086.948  TWILIGHT
  8 12 13 +130  4 42  -37 54 48                          + 1090.714  TWILIGHT
  8 12 14 +133  6 57  -35 54 55                          + 1093.522  TWILIGHT
  8 12 15 +135 59 12  -33 49 57                          + 1095.368  TWILIGHT
OOMERA 119  8 12 15 16.939  S14.1605   1124.648    NE
  8 12 16 +138 42 22  -31 40 31                          + 1096.254
OOMERA 119  8 12 16 15.462  E14.9490   1128.699    NE          **
  8 12 17 +141 17 20  -29 27  6                          + 1096.182
  8 12 18 +143 44 59  -27 10 11                          + 1095.160
  8 12 19 +146  6  8  -24 50 11                          + 1093.196
  8 12 20 +148 21 35  -22 27 26                          + 1090.302
  8 12 21 +150 32  4  -20  2 16                          + 1086.494
  8 12 22 +152 38 17  -17 34 58                          + 1081.787
  8 12 23 +154 40 54  -15  5 49                          + 1076.201
  8 12 24 +156 40 33  -12 35  1                          + 1069.759
  8 12 25 +158 37 51  -10  2 50                          + 1062.484
  8 12 26 +160 33 21  - 7 29 26                          + 1054.402
  8 12 27 +162 27 38  - 4 55  2                          + 1045.542
  8 12 28 +164 21 15  - 2 19 49                          + 1035.934
   8 12 28 53  LONG.  +166  3  4  PASS NO.  368 + 1026.670
  8 12 29 +166 14 44  + 0 16  1                          + 1025.611
  8 12 30 +168  8 38  + 2 52 16                          + 1014.606
  8 12 31 +170  3 32  + 5 28 46                          + 1002.955
  8 12 32 +171 59 59  + 8  5 18                          +  990.697
  8 12 33 +173 58 36  +10 41 37                          +  977.870
  8 12 34 +175 59 59  +13 17 32                          +  964.515
  8 12 35 +178  4 50  +15 52 44                          +  950.675
  8 12 36 -179 46 10  +18 26 58                          +  936.392
  8 12 37 -177 32 15  +20 59 55                          +  921.713
BSANDS 100  8 12 37 24.342  W71.7178   2064.121    NE          **
  8 12 38 -175 12 35  +23 31 11                          +  906.684
  8 12 39 -172 46 16  +26  0 23                          +  891.352
  8 12 40 -170 12 22  +28 27  3                          +  875.767
  8 12 41 -167 29 49  +30 50 39                          +  859.978
  8 12 42 -164 37 32  +33 10 33                          +  844.037
```

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  8 12 43 -161 34 21  +35 26  4                          +  827.995
BSANDS 100  8 12 43 33.214  N71.9972   1900.642    NE
  8 12 44 -158 19  4  +37 36 24                          +  811.907
  8 12 45 -154 50 30  +39 40 38                          +  795.825
  8 12 46 -151  7 31  +41 37 45                          +  779.806
  8 12 47 -147  9  8  +43 26 37                          +  763.905
  8 12 48 -142 54 41  +45  5 58                          +  748.178
  8 12 49 -138 23 51  +46 34 29                          +  732.683
  8 12 50 -133 36 55  +47 50 46                          +  717.476
  8 12 51 -128 34 55  +48 53 26                          +  702.616
  8 12 52 -123 19 43  +49 41 12                          +  688.160  TWILIGHT
STNFDU  98  8 12 52 12.936  N70.9885   1599.047    NE
  8 12 53 -117 54  5  +50 12 55                          +  674.167  TWILIGHT
GOLDST 103  8 12 53 11.253  N76.4769   1858.310    NE
  8 12 54 -112 21 32  +50 27 44                          +  660.694  TWILIGHT
  8 12 55 -106 46 11  +50 25  7                          +  647.798  TWILIGHT
WHITES 111  8 12 55  0.162  N80.0897   2045.145    SE
BOLDER  95  8 12 55 16.209  N66.8484   1352.109    SE
  8 12 56 -101 12 22  +50  4 57                          +  635.535  TWILIGHT
FTSILL 110  8 12 56 30.346  N78.0291   1866.069    SE
  8 12 57 -  95 44 17  +49 27 28                         +  623.962
ARKANS 109  8 12 57 55.957  N75.6904   1692.452    SE
  8 12 58 -  90 25 37  +48 33 21                         +  613.131
UWISCN 102  8 12 58  8.481  N48.0237    869.146    SE
2RSTON  99  8 12 58 43.768  N74.8369   1628.767    SE
UILNOS  97  8 12 58 25.352  N60.7795   1108.464    SE
  8 12 59 -  85 19 17  +47 23 30                         +  603.097
CPCAN1 107  8 12 59 58.070  N82.9810   2140.406    SE
  8 13  0 -  80 27 21  +45 59  5                         +  593.909
BPOINT 126  8 13  0 43.347  N54.8159    945.379    SE
BELVOR 113  8 13  0 42.832  N53.5357    922.380    SE
ABDEEN 112  8 13  0 56.778  N46.9997    821.155    SE
LANGLY 106  8 13  0 52.617  N59.6247   1044.065    SE
PNSTAT  96  8 13  0 33.068  N42.4589    771.672    SE
  8 13  1 -  75 50 59  +44 21 23                         +  585.614
PDRSPG 117  8 13  1  4.276  N65.1972   1192.358    SE
FTMONM 104  8 13  1 24.567  N35.4671    700.565    SE
LINCON 105  8 13  1 57.155  W 1.8972    578.867    SE        **
UWISCN 102  8 13  1 42.385  E74.2848   1546.897    SE        **
  8 13  2 -  71 30 37  +42 31 43                         +  578.259
LINCON 105  8 13  2  0.059  S 1.2608    578.371    SE
PNSTAT  96  8 13  2 51.846  E60.5083   1041.996    SE        **
```

```
  8 13  3 - 67 26  4  +40 31 24                                    +  571.885
BELVOR 113  8 13  3 50.616  E69.3231    1302.077     SE             **
ABDEEN 112  8 13  3 29.440  E63.1178    1103.811     SE             **
FTMONM 104  8 13  3  7.399  E50.4762     848.963     SE             **
UILNOS  97  8 13  3 11.725  E81.7481    1990.859     SE             **
  8 13  4 - 63 36 41  +38 21 43                                    +  566.531
  8 13  5 - 60  1 31  +36  3 48                                    +  562.230
PDRSPG 117  8 13  5 20.285  E77.3365    1672.453     SE             **
  8 13  6 - 56 39 26  +33 38 45                                    +  559.014
  8 13  7 - 53 29 17  +31  7 32                                    +  556.906
  8 13  8 - 50 29 45  +28 31  3                                    +  555.928
  8 13  9 - 47 39 41  +25 50  5                                    +  556.093
  8 13 10 - 44 57 54  +23  5 22                                    +  557.409
  8 13 11 - 42 23 19  +20 17 31                                    +  559.879
  8 13 12 - 39 54 54  +17 27  9                                    +  563.500
  8 13 13 - 37 31 41  +14 34 47                                    +  568.262
  8 13 14 - 35 12 47  +11 40 55                                    +  574.149
  8 13 15 - 32 57 19  + 8 46  1                                    +  581.136
  8 13 16 - 30 44 32  + 5 50 29                                    +  589.196
  8 13 17 - 28 33 37  + 2 54 44                                    +  598.293
  8 13 18 - 26 23 52  - 0  0 51                                    +  608.387
  8 13 19 - 24 14 32  - 2 55 53                                    +  619.430
  8 13 20 - 22  4 56  - 5 50  2                                    +  631.372
  8 13 21 - 19 54 21  - 8 42 56                                    +  644.155
  8 13 22 - 17 42  6  -11 34 13                                    +  657.718
  8 13 23 - 15 27 27  -14 23 32                                    +  671.997
  8 13 24 - 13  9 39  -17 10 30                                    +  686.924
  8 13 25 - 10 47 56  -19 54 45                                    +  702.426
  8 13 26 -  8 21 30  -22 35 51                                    +  718.431
  8 13 27 -  5 49 31  -25 13 24                                    +  734.864
  8 13 28 -  3 11  7  -27 46 54                                    +  751.648
  8 13 29 -  0 25 24  -30 15 53                                    +  768.706
  8 13 30 +  2 28 35  -32 39 46                                    +  785.962
  8 13 31 +  5 31 46  -34 57 58                                    +  803.337
  8 13 32 +  8 45  4  -37  9 48                                    +  820.756
  8 13 33 + 12  9 23  -39 14 34                                    +  838.143
  8 13 34 + 15 45 30  -41 11 29                                    +  855.425
  8 13 35 + 19 34  1  -42 59 42                                    +  872.531
  8 13 36 + 23 35 20  -44 38 19                                    +  889.390
  8 13 37 + 27 49 29  -46  6 26                                    +  905.936
  8 13 38 + 32 16  4  -47 23  7                                    +  922.105
  8 13 39 + 36 54  9  -48 27 30                                    +  937.833
```

8	13	40	+ 41	42	15	-49	18	45	+ 953.065	
8	13	41	+ 46	38	17	-49	56	14	+ 967.744	
8	13	42	+ 51	39	38	-50	19	27	+ 981.819	
8	13	43	+ 56	43	20	-50	28	9	+ 995.241	
8	13	44	+ 61	46	15	-50	22	19	+ 1007.966	
8	13	45	+ 66	45	14	-50	2	14	+ 1019.953	
8	13	46	+ 71	37	28	-49	28	23	+ 1031.163	
8	13	47	+ 76	20	31	-48	41	27	+ 1041.563	
8	13	48	+ 80	52	33	-47	42	17	+ 1051.122	
8	13	49	+ 85	12	18	-46	31	49	+ 1059.814	
8	13	50	+ 89	19	3	-45	11	2	+ 1067.615	TWILIGHT
8	13	51	+ 93	12	35	-43	40	55	+ 1074.506	TWILIGHT
8	13	52	+ 96	53	4	-42	2	25	+ 1080.469	TWILIGHT
8	13	53	+100	20	58	-40	16	26	+ 1085.491	TWILIGHT
8	13	54	+103	36	58	-38	23	48	+ 1089.563	TWILIGHT
8	13	55	+106	41	51	-36	25	16	+ 1092.678	TWILIGHT
8	13	56	+109	36	32	-34	21	30	+ 1094.834	TWILIGHT
8	13	57	+112	21	53	-32	13	7	+ 1096.028	
8	13	58	+114	58	49	-30	0	39	+ 1096.265	
8	13	59	+117	28	12	-27	44	34	+ 1095.549	
8	14	0	+119	50	53	-25	25	18	+ 1093.888	
8	14	1	+122	7	40	-23	3	12	+ 1091.295	
8	14	2	+124	19	18	-20	38	37	+ 1087.782	
8	14	3	+126	26	31	-18	11	51	+ 1083.365	
8	14	4	+128	29	58	-15	43	9	+ 1078.064	
8	14	5	+130	30	17	-13	12	45	+ 1071.899	
8	14	6	+132	28	6	-10	40	55	+ 1064.894	
8	14	7	+134	23	58	- 8	7	49	+ 1057.073	
8	14	8	+136	18	29	- 5	33	41	+ 1048.466	
8	14	9	+138	12	12	- 2	58	41	+ 1039.101	
8	14	10	+140	5	37	- 0	23	1	+ 1029.009	
8	14	10	8	LONG.		+140	22	24	PASS NO. 369	+ 1027.417
8	14	11	+141	59	21	+ 2	13	7	+ 1018.225	
8	14	12	+143	53	55	+ 4	49	33	+ 1006.784	
8	14	13	+145	49	54	+ 7	26	3	+ 994.722	
8	14	14	+147	47	52	+10	2	24	+ 982.079	
8	14	15	+149	48	28	+12	38	24	+ 968.894	
8	14	16	+151	52	21	+15	13	46	+ 955.210	
8	14	17	+154	0	11	+17	48	14	+ 941.069	
8	14	18	+156	12	45	+20	21	29	+ 926.516	
8	14	19	+158	30	51	+22	53	10	+ 911.597	
8	14	20	+160	55	20	+25	22	54	+ 896.360	

```
  8 14 21 +163 27 10   +27 50 12                          +   880.853
  8 14 22 +166  7 23   +30 14 35                          +   865.125
  8 14 23 +168 57  1   +32 35 26                          +   849.228
  8 14 24 +171 57 16   +34 52  6                          +   833.212
  8 14 25 +175  9 18   +37  3 47                          +   817.132
  8 14 26 +178 34 18   +39  9 38                          +   801.041
  8 14 27 -177 46 33   +41  8 38                          +   784.994
  8 14 28 -173 52 16   +42 59 41                          +   769.046
  8 14 29 -169 42  3   +44 41 33                          +   753.253
  8 14 30 -165 15 29   +46 12 57                          +   737.673
  8 14 31 -160 32 41   +47 32 28                          +   722.362
BSANDS 100  8 14 31  9.138  N89.6102   3066.207    NE
  8 14 32 -155 34 30   +48 38 44                          +   707.379
  8 14 33 -150 22 33   +49 30 26                          +   692.781  TWILIGHT
  8 14 34 -144 59 23   +50  6 21                          +   678.627  TWILIGHT
  8 14 35 -139 28 19   +50 25 34                          +   664.974  TWILIGHT
  8 14 36 -133 53 21   +50 27 28                          +   651.880  TWILIGHT
  8 14 37 -128 18 49   +50 11 49                          +   639.402  TWILIGHT
  8 14 38 -122 48 57   +49 38 46                          +   627.595
STNFDU  98  8 14 38  7.140  N72.2356   1541.238    SE
  8 14 39 -117 27 36   +48 48 52                          +   616.514
GOLDST 103  8 14 39  6.796  N75.1014   1661.105    SE
  8 14 40 -112 17 55   +47 42 59                          +   606.212
  8 14 41 -107 22  9   +46 22 14                          +   596.741
WHITES 111  8 14 41  7.714  N73.9525   1561.716    SE
BOLDER  95  8 14 41 26.727  N50.3129    874.532    SE
  8 14 42 -102 41 44   +44 47 51                          +   588.149
FTSILL 110  8 14 42 58.147  N63.4835   1133.714    SE
UWISCN 102  8 14 42 57.962  W55.3271    943.909    SE         **
  8 14 43 - 98 17 16   +43  1 10                          +   580.483
LINCON 105  8 14 43 12.711  W84.9550   2275.150    SE         **
  8 14 44 - 94  8 42   +41  3 30                          +   573.786
ARKANS 109  8 14 44 51.773  N42.6979    748.610    SE
ABDEEN 112  8 14 44 45.017  W73.1668   1469.896    SE         **
FTMONM 104  8 14 44 22.934  W78.0801   1741.393    SE         **
UILNOS  97  8 14 44 27.281  W34.3283    678.481    SE         **
PNSTAT  96  8 14 44  7.341  W73.6567   1500.261    SE         **
BOLDER  95  8 14 44 26.642  E68.4954   1275.360    SE         **
  8 14 45 - 90 15 29   +38 56  7                          +   568.097
UWISCN 102  8 14 45  9.201  S44.8907    770.123    SE
2RSTON  99  8 14 45 58.948  N23.5363    609.978    SE
UILNOS  97  8 14 45 32.828  S27.5195    630.383    SE
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BELVOR 113  8 14 45  6.193  W68.8916   1286.328    SE        **
  8 14 46 - 86 36 46  +36 40 14                     +   563.452
PDRSPG 117  8 14 46 35.841  W60.5071   1023.400    SE        **
FTSILL 110  8 14 46 50.570  E74.3642   1508.884    SE        **
ARKANS 109  8 14 46 41.692  E50.7727    838.713    SE        **
2RSTON  99  8 14 46 50.076  E27.7311    626.204    SE        **
  8 14 47 - 83 11 26  +34 16 57                     +   559.883
CPCAN1 107  8 14 47 47.898  N42.1101    728.609    SE
WHITES 111  8 14 47 13.889  E86.8213   2398.980    SE        **
  8 14 48 - 79 58 18  +31 47 15                     +   557.416
BELVOR 113  8 14 48 55.897  S67.4938   1213.722    SE
PNSTAT  96  8 14 48 41.065  S71.4700   1365.040    SE
  8 14 49 - 76 56  8  +29 12  3                     +   556.073
PDRSPG 117  8 14 49 29.000  S60.5264   1014.501    SE
ABDEEN 112  8 14 49 17.485  S72.1219   1392.899    SE
CPCAN1 107  8 14 49 21.975  E43.1846    737.161    SE        **
  8 14 50 - 74  3 43  +26 32 10                     +   555.871
LINCON 105  8 14 50 56.114  S84.9762   2218.007    SE
FTMONM 104  8 14 50  0.682  S77.7391   1682.993    SE
  8 14 51 - 71 19 53  +23 48 21                     +   556.818
  8 14 52 - 68 43 32  +21  1 15                     +   558.920
  8 14 53 - 66 13 37  +18 11 28                     +   562.175
PANTIG 120  8 14 53 21.896  W36.7648    688.324    SE        **
  8 14 54 - 63 49  8  +15 19 34                     +   566.576
PANTIG 120  8 14 54 52.183  S43.4719    759.967    SE
  8 14 55 - 61 29 10  +12 26  1                     +   572.107
  8 14 56 - 59 12 53  + 9 31 19                     +   578.748
  8 14 57 - 56 59 28  + 6 35 53                     +   586.472
  8 14 58 - 54 48  6  + 3 40  8                     +   595.246
  8 14 59 - 52 38  5  + 0 44 26                     +   605.030
  8 15  0 - 50 28 41  - 2 10 49                     +   615.779
  8 15  1 - 48 19 12  - 5  5 16                     +   627.443
  8 15  2 - 46  8 55  - 7 58 33                     +   639.968
  8 15  3 - 43 57  7  -10 50 20                     +   653.292
  8 15  4 - 41 43  7  -13 40 14                     +   667.353
  8 15  5 - 39 26  9  -16 27 53                     +   682.083
  8 15  6 - 37  5 28  -19 12 55                     +   697.412
  8 15  7 - 34 40 17  -21 54 55                     +   713.267
  8 15  8 - 32  9 46  -24 33 27                     +   729.573
  8 15  9 - 29 33  2  -27  8  5                     +   746.255
  8 15 10 - 26 49 12  -29 38 19                     +   763.235
  8 15 11 - 23 57 22  -32  3 36                     +   780.436
```

8	15	12	-	20	56	34	-34	23	21	+ 797.781	
8	15	13	-	17	45	52	-36	36	55	+ 815.194	
8	15	14	-	14	24	21	-38	43	36	+ 832.598	
8	15	15	-	10	51	14	-40	42	37	+ 849.920	
8	15	16	-	7	5	49	-42	33	9	+ 867.087	
8	15	17	-	3	7	41	-44	14	19	+ 884.030	
8	15	18	+	1	3	19	-45	45	13	+ 900.680	
8	15	19	+	5	26	55	-47	4	54	+ 916.972	
8	15	20	+	10	2	18	-48	12	28	+ 932.845	
8	15	21	+	14	48	8	-49	7	7	+ 948.238	
8	15	22	+	19	42	28	-49	48	8	+ 963.096	
8	15	23	+	24	42	50	-50	14	58	+ 977.365	
8	15	24	+	29	46	20	-50	27	20	+ 990.997	
8	15	25	+	34	49	50	-50	25	8	+ 1003.946	
8	15	26	+	39	50	9	-50	8	35	+ 1016.169	
8	15	27	+	44	44	23	-49	38	7	+ 1027.628	
8	15	28	+	49	29	59	-48	54	22	+ 1038.287	
8	15	29	+	54	4	59	-47	58	10	+ 1048.115	
8	15	30	+	58	27	56	-46	50	25	+ 1057.085	
8	15	31	+	62	38	1	-45	32	6	+ 1065.171	TWILIGHT
8	15	32	+	66	34	52	-44	4	13	+ 1072.352	TWILIGHT
8	15	33	+	70	18	37	-42	27	42	+ 1078.613	TWILIGHT
8	15	34	+	73	49	37	-40	43	30	+ 1083.936	TWILIGHT
8	15	35	+	77	8	32	-38	52	26	+ 1088.313	TWILIGHT
8	15	36	+	80	16	8	-36	55	18	+ 1091.736	TWILIGHT
8	15	37	+	83	13	16	-34	52	46	+ 1094.199	TWILIGHT
8	15	38	+	86	0	52	-32	45	29	+ 1095.703	TWILIGHT
8	15	39	+	88	39	49	-30	33	59	+ 1096.248	
8	15	40	+	91	11	0	-28	18	46	+ 1095.838	
8	15	41	+	93	35	16	-26	0	15	+ 1094.482	
8	15	42	+	95	53	27	-23	38	50	+ 1092.190	
8	15	43	+	98	6	18	-21	14	50	+ 1088.974	
8	15	44	+100	14	32		-18	48	36	+ 1084.850	
8	15	45	+102	18	51		-16	20	22	+ 1079.835	
8	15	46	+104	19	52		-13	50	23	+ 1073.949	
8	15	47	+106	18	14		-11	18	55	+ 1067.216	
8	15	48	+108	14	32		-	8	46 8	+ 1059.660	
8	15	49	+110	9	18		-	6	12 15	+ 1051.308	
8	15	50	+112	3	8		-	3	37 29	+ 1042.189	
8	15	51	+113	56	33		-	1	2 0	+ 1032.333	
8	15	51	23	LONG.			+114	41	44	PASS NO. 370	+ 1028.133
8	15	52	+115	50	9		+	1	34 1	+ 1021.774	

```
  8 15 53 +117 44 25   + 4 10 21                          + 1010.545
  8 15 54 +119 39 57   + 6 46 49                          +  998.684
  8 15 55 +121 37 20   + 9 23 11                          +  986.229
  8 15 56 +123 37 11   +11 59 15                          +  973.219
  8 15 57 +125 40  8   +14 34 46                          +  959.695
  8 15 58 +127 46 52   +17  9 27                          +  945.700
  8 15 59 +129 58  8   +19 42 59                          +  931.279
  8 16  0 +132 14 42   +22 15  4                          +  916.476
  8 16  1 +134 37 26   +24 45 17                          +  901.338
  8 16  2 +137  7 17   +27 13 12                          +  885.915
TOKAWA 108  8 16  2  5.518  S48.5104    1244.122     NE
  8 16  3 +139 45 13   +29 38 19                          +  870.254
  8 16  4 +142 32 18   +32  0  5                          +  854.406
  8 16  5 +145 29 41   +34 17 50                          +  838.423
TOKAWA 108  8 16  5 14.126  E49.6134    1198.658     NE          **
  8 16  6 +148 38 33   +36 30 50                          +  822.357
  8 16  7 +152  0  4   +38 38 13                          +  806.262
  8 16  8 +155 35 26   +40 39  1                          +  790.193
  8 16  9 +159 25 42   +42 32 10                          +  774.203
  8 16 10 +163 31 43   +44 16 28                          +  758.351
  8 16 11 +167 54  1   +45 50 39                          +  742.692
  8 16 12 +172 32 37   +47 13 19                          +  727.284
  8 16 13 +177 26 54   +48 23  5                          +  712.185
  8 16 14 -177 24 35   +49 18 37                          +  697.451  TWILIGHT
  8 16 15 -172  4  5   +49 58 41                          +  683.142  TWILIGHT
  8 16 16 -166 34 46   +50 22 16                          +  669.316  TWILIGHT
  8 16 17 -161  0 30   +50 28 39                          +  656.030  TWILIGHT
  8 16 18 -155 25 31   +50 17 31                          +  643.341  TWILIGHT
  8 16 19 -149 54  8   +49 48 55                          +  631.306  TWILIGHT
  8 16 20 -144 30 20   +49  3 18                          +  619.980
  8 16 21 -139 17 25   +48  1 28                          +  609.416
  8 16 22 -134 17 57   +46 44 27                          +  599.668
  8 16 23 -129 33 32   +45 13 29                          +  590.783
  8 16 24 -125  4 57   +43 29 52                          +  582.810
STNFDU  98  8 16 24 41.142  N46.1059     798.781     SE
  8 16 25 -120 52 21   +41 34 56                          +  575.793
NELCAL 121  8 16 25 59.028  N58.1794     984.608     SE
UILNOS  97  8 16 25 42.796  W89.3028    2684.314     SE          **
BOLDER  95  8 16 25 42.157  W68.4380    1273.889     SE          **
  8 16 26 -116 55 15   +39 29 58                          +  569.773
GOLDST 103  8 16 26  0.923  N41.6561     737.826     SE
STNFDU  98  8 16 26 55.718  E58.3342     980.416     SE          **
```

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  8 16 27 -113 12 54  +37 16 11                                  +  564.787
ARKANS 109  8 16 27 57.268  W80.7859   1897.284    SE                **
GOLDST 103  8 16 27 47.916  E50.0515    827.730    SE                **
  8 16 28 -109 44 13  +34 54 43                                  +  560.867
WHITES 111  8 16 28 54.679  S12.8803    571.450    SE
WHITES 111  8 16 28 29.465  W13.8800    574.751    SE                **
FTSILL 110  8 16 28  6.147  W66.4901   1189.215    SE                **
2RSTON  99  8 16 28  5.611  W84.9939   2232.673    SE                **
  8 16 29 -106 28  3  +32 26 35                                  +  558.043
BOLDER  95  8 16 29 23.374  S65.4952   1148.092    SE
  8 16 30 -103 23 10  +29 52 44                                  +  556.336
CPCAN1 107  8 16 30 37.490  W84.7998   2203.513    SE                **
  8 16 31 -100 28 20  +27 14  0                                  +  555.766
FTSILL 110  8 16 31 44.376  S67.7882   1223.651    SE
  8 16 32 - 97 42 24  +24 31  8                                  +  556.345
  8 16 33 - 95  4 12  +21 44 49                                  +  558.078
  8 16 34 - 92 32 42  +18 55 40                                  +  560.967
ARKANS 109  8 16 34 43.529  S84.1885   2166.267    SE
  8 16 35 - 90  6 53  +16  4 14                                  +  565.004
  8 16 36 - 87 45 50  +13 11  3                                  +  570.178
2RSTON  99  8 16 36 28.504  S89.3854   2690.425    SE
  8 16 37 - 85 28 39  +10 16 35                                  +  576.470
  8 16 38 - 83 14 32  + 7 21 17                                  +  583.854
  8 16 39 - 81  2 42  + 4 25 32                                  +  592.300
  8 16 40 - 78 52 22  + 1 29 46                                  +  601.769
QUITOE 125  8 16 40  7.907  N19.3545    632.095    SE
QUITOE 125  8 16 40 43.215  E14.3057    623.274    SE                **
  8 16 41 - 76 42 51  - 1 25 40                                  +  612.219
  8 16 42 - 74 33 25  - 4 20 24                                  +  623.601
  8 16 43 - 72 23 23  - 7 14  4                                  +  635.860
  8 16 44 - 70 12  1  -10  6 18                                  +  648.940
LIMAPU 124  8 16 44 35.040  E59.2713   1149.188    SE                **
  8 16 45 - 67 58 36  -12 56 46                                  +  662.776
  8 16 46 - 65 42 26  -15 45  4                                  +  677.303
  8 16 47 - 63 22 44  -18 30 51                                  +  692.451
  8 16 48 - 60 58 45  -21 13 43                                  +  708.149
  8 16 49 - 58 29 37  -23 53 14                                  +  724.321
  8 16 50 - 55 54 30  -26 28 57                                  +  740.893
  8 16 51 - 53 12 32  -29  0 24                                  +  757.786
  8 16 52 - 50 22 47  -31 27  3                                  +  774.926
  8 16 53 - 47 24 17  -33 48 19                                  +  792.233
  8 16 54 - 44 16  7  -36  3 34                                  +  809.631
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8	16	55	-	40	57	22	-38	12	6	+	827.045	
8	16	56	-	37	27	12	-40	13	11	+	844.400	
8	16	57	-	33	44	53	-42	5	59	+	861.622	
8	16	58	-	29	49	55	-43	49	39	+	878.642	
8	16	59	-	25	42	5	-45	23	15	+	895.390	
8	17	0	-	21	21	32	-46	45	53	+	911.800	
8	17	1	-	16	48	57	-47	56	37	+	927.810	
8	17	2	-	12	5	30	-48	54	37	+	943.358	
8	17	3	-	7	13	0	-49	39	8	+	958.389	
8	17	4	-	2	13	48	-50	9	35	+	972.848	
8	17	5	+	2	49	18	-50	25	36	+	986.685	
8	17	6	+	7	53	10	-50	27	3	+	999.853	
8	17	7	+	12	54	39	-50	14	4	+	1012.309	
8	17	8	+	17	50	44	-49	47	1	+	1024.013	
8	17	9	+	22	38	47	-49	6	31	+	1034.928	
8	17	10	+	27	16	38	-48	13	20	+	1045.022	
8	17	11	+	31	42	44	-47	8	22	+	1054.267	
8	17	12	+	35	56	8	-45	52	35	+	1062.635	TWILIGHT
8	17	13	+	39	56	20	-44	26	59	+	1070.106	TWILIGHT
8	17	14	+	43	43	21	-42	52	31	+	1076.662	TWILIGHT
8	17	15	+	47	17	31	-41	10	9	+	1082.285	TWILIGHT
8	17	16	+	50	39	24	-39	20	42	+	1086.966	TWILIGHT
8	17	17	+	53	49	45	-37	25	0	+	1090.695	TWILIGHT
8	17	18	+	56	49	26	-35	23	45	+	1093.466	TWILIGHT
8	17	19	+	59	39	19	-33	17	35	+	1095.278	TWILIGHT
8	17	20	+	62	20	20	-31	7	5	+	1096.131	
8	17	21	+	64	53	22	-28	52	44	+	1096.029	
8	17	22	+	67	19	17	-26	35	0	+	1094.979	
8	17	23	+	69	38	55	-24	14	17	+	1092.988	
8	17	24	+	71	53	1	-21	50	55	+	1090.071	
8	17	25	+	74	2	19	-19	25	13	+	1086.240	
8	17	26	+	76	7	32	-16	57	28	+	1081.513	
8	17	27	+	78	9	18	-14	27	55	+	1075.910	
8	17	28	+	80	8	16	-11	56	48	+	1069.451	
8	17	29	+	82	4	59	- 9	24	21	+	1062.162	
8	17	30	+	84	0	5	- 6	50	46	+	1054.068	
8	17	31	+	85	54	4	- 4	16	13	+	1045.197	
8	17	32	+	87	47	32	- 1	40	55	+	1035.580	
8	17	32	38	LONG.			+ 89	1	1	PASS NO. 371	+ 1028.887	
8	17	33	+	89	40	59	+ 0	54	56	+	1025.249	
8	17	34	+	91	35	0	+ 3	31	11	+	1014.237	
8	17	35	+	93	30	9	+ 6	7	36	+	1002.581	

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  8 17 36 + 95 26 59   + 8 43 59                                  +   990.318
  8 17 37 + 97 26  7   +11 20  6                                  +   977.487
  8 17 38 + 99 28 11   +13 55 44                                  +   964.129
  8 17 39 +101 33 52   +16 30 37                                  +   950.285
  8 17 40 +103 43 52   +19  4 26                                  +   936.000
  8 17 41 +105 58 59   +21 36 52                                  +   921.317
  8 17 42 +108 20  2   +24  7 32                                  +   906.286
  8 17 43 +110 47 57   +26 36  2                                  +   890.951
  8 17 44 +113 23 40   +29  1 53                                  +   875.362
  8 17 45 +116  8 17   +31 24 31                                  +   859.570
  8 17 46 +119  2 53   +33 43 18                                  +   843.625
TOKAWA 108  8 17 46 29.373  W69.9818    1832.818     NE              **
  8 17 47 +122  8 39   +35 57 32                                  +   827.579
  8 17 48 +125 26 47   +38  6 23                                  +   811.487
  8 17 49 +128 58 27   +40  8 55                                  +   795.401
  8 17 50 +132 44 44   +42  4  6                                  +   779.377
  8 17 51 +136 46 36   +43 50 45                                  +   763.472
TOKAWA 108  8 17 51  8.247  N59.6491    1323.996     NE
  8 17 52 +141  4 38   +45 27 37                                  +   747.740
  8 17 53 +145 39  0   +46 53 20                                  +   732.241
  8 17 54 +150 29 17   +48  6 31                                  +   717.031
  8 17 55 +155 34 15   +49  5 48                                  +   702.168
  8 17 56 +160 51 51   +49 49 56                                  +   687.711   TWILIGHT
  8 17 57 +166 19  9   +50 17 49                                  +   673.717   TWILIGHT
  8 17 58 +171 52 27   +50 28 41                                  +   660.245   TWILIGHT
  8 17 59 +177 27 35   +50 22  4                                  +   647.351   TWILIGHT
  8 18  0 -176 59 47   +49 57 57                                  +   635.094   TWILIGHT
  8 18  1 -171 33 44   +49 16 40                                  +   623.528
  8 18  2 -166 17 49   +48 18 56                                  +   612.708
  8 18  3 -161 14 44   +47  5 44                                  +   602.686
  8 18  4 -156 26 22   +45 38 15                                  +   593.513
  8 18  5 -151 53 42   +43 57 48                                  +   585.238
  8 18  6 -147 37  0   +42  5 41                                  +   577.905
  8 18  7 -143 36  0   +40  3 12                                  +   571.557
  8 18  8 -139 49 56   +37 51 36                                  +   566.232
STNFDU  98  8 18  8 11.212  W77.0183    1663.240     SE              **
  8 18  9 -136 17 50   +35 32  2                                  +   561.965
WHITES 111  8 18  9 44.960  W89.2723    2650.965     SE              **
GOLDST 103  8 18  9  3.411  W80.8462    1900.979     SE              **
  8 18 10 -132 58 33   +33  5 32                                  +   558.785
  8 18 11 -129 50 52   +30 33  6                                  +   556.717
  8 18 12 -126 53 33   +27 55 33                                  +   555.780
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  8 18 13 -124  5 25  +25 13 41                                    +  555.990
STNFDU  98  8 18 13 43.068  S78.4501    1728.325     SE
  8 18 14 -121 25 19  +22 28 11                                    +  557.354
  8 18 15 -118 52 10  +19 39 42                                    +  559.875
GOLDST 103  8 18 15 49.115  S84.1111    2154.886     SE
  8 18 16 -116 24 57  +16 48 48                                    +  563.547
  8 18 17 -114  2 44  +13 56  1                                    +  568.362
  8 18 18 -111 44 37  +11  1 49                                    +  574.302
  8 18 19 -109 29 46  + 8  6 39                                    +  581.343
  8 18 20 -107 17 23  + 5 10 58                                    +  589.456
  8 18 21 -105  6 44  + 2 15  8                                    +  598.607
  8 18 22 -102 57  3  - 0 40 28                                    +  608.752
  8 18 23 -100 47 38  - 3 35 27                                    +  619.846
  8 18 24 - 98 37 47  - 6 29 27                                    +  631.835
  8 18 25 - 96 26 47  - 9 22  8                                    +  644.663
  8 18 26 - 94 13 56  -12 13  7                                    +  658.268
  8 18 27 - 91 58 31  -15  2  4                                    +  672.585
  8 18 28 - 89 39 45  -17 48 35                                    +  687.545
  8 18 29 - 87 16 53  -20 32 16                                    +  703.077
  8 18 30 - 84 49  6  -23 12 44                                    +  719.109
  8 18 31 - 82 15 34  -25 49 31                                    +  735.563
  8 18 32 - 79 35 23  -28 22 10                                    +  752.363
  8 18 33 - 76 47 39  -30 50  8                                    +  769.432
SNTAGO 122  8 18 33 58.142  W23.8534     849.817     SE         **
  8 18 34 - 73 51 24  -33 12 52                                    +  786.694
  8 18 35 - 70 45 44  -35 29 45                                    +  804.071
SNTAGO 122  8 18 35  1.547  S20.5300     851.693     SE
  8 18 36 - 67 29 42  -37 40  7                                    +  821.487
  8 18 37 - 64  2 26  -39 43 12                                    +  838.867
  8 18 38 - 60 23 11  -41 38 13                                    +  856.138
  8 18 39 - 56 31 22  -43 24 19                                    +  873.227
  8 18 40 - 52 26 43  -45  0 35                                    +  890.066
  8 18 41 - 48  9 16  -46 26  6                                    +  906.588
  8 18 42 - 43 39 32  -47 39 57                                    +  922.729
  8 18 43 - 38 58 35  -48 41 15                                    +  938.428
  8 18 44 - 34  8  4  -49 29 14                                    +  953.627
  8 18 45 - 29 10 13  -50  3 16                                    +  968.270
  8 18 46 - 24  7 45  -50 22 57                                    +  982.307
  8 18 47 - 19  3 42  -50 28  3                                    +  995.690
  8 18 48 - 14  1 14  -50 18 40                                    + 1008.374
  8 18 49 -  9  3 28  -49 55  5                                    + 1020.319
  8 18 50 -  4 13  7  -49 17 53  164                               + 1031.487
```

8	18	51	+	0	27	31	-48	27	47	+	1041.843	
8	18	52	+	4	56	44	-47	25	39	+	1051.360	
8	18	53	+	9	13	25	-46	12	28	+	1060.009	
8	18	54	+	13	16	58	-44	49	12	+	1067.767	TWILIGHT
8	18	55	+	17	7	17	-43	16	51	+	1074.616	TWILIGHT
8	18	56	+	20	44	38	-41	36	21	+	1080.538	TWILIGHT
8	18	57	+	24	9	32	-39	48	35	+	1085.521	TWILIGHT
8	18	58	+	27	22	42	-37	54	22	+	1089.555	TWILIGHT
JOBURG 118			8	18	58	16.536	S57.1308			1739.462	NE	
8	18	59	+	30	24	58	-35	54	25	+	1092.634	TWILIGHT
8	19	0	+	33	17	13	-33	49	25	+	1094.754	TWILIGHT
8	19	1	+	36	0	22	-31	39	56	+	1095.916	
8	19	2	+	38	35	19	-29	26	30	+	1096.121	
8	19	3	+	41	2	56	-27	9	35	+	1095.376	
8	19	4	+	43	24	2	-24	49	34	+	1093.689	
8	19	5	+	45	39	26	-22	26	50	+	1091.071	
8	19	6	+	47	49	52	-20	1	41	+	1087.535	
8	19	7	+	49	56	1	-17	34	26	+	1083.098	
8	19	8	+	51	58	34	-15	5	20	+	1077.779	
8	19	9	+	53	58	10	-12	34	37	+	1071.597	
8	19	10	+	55	55	22	-10	2	30	+	1064.577	
8	19	11	+	57	50	48	- 7	29	11	+	1056.744	
8	19	12	+	59	44	59	- 4	54	53	+	1048.125	
8	19	13	+	61	38	30	- 2	19	48	+	1038.750	
8	19	13	53	LONG.			+ 63	20	18	PASS NO. 372	+ 1029.682	
8	19	14	+	63	31	53	+ 0	15	55	+	1028.651	
8	19	15	+	65	25	41	+ 2	52	3	+	1017.860	
8	19	16	+	67	20	27	+ 5	28	24	+	1006.412	
8	19	17	+	69	16	47	+ 8	4	47	+	994.346	
8	19	18	+	71	15	15	+10	40	57	+	981.697	
8	19	19	+	73	16	29	+13	16	41	+	968.509	
8	19	20	+	75	21	9	+15	51	44	+	954.821	
8	19	21	+	77	29	58	+18	25	48	+	940.677	
8	19	22	+	79	43	40	+20	58	35	+	926.121	
8	19	23	+	82	3	6	+23	29	41	+	911.200	
8	19	24	+	84	29	8	+25	58	44	+	895.959	
8	19	25	+	87	2	44	+28	25	15	+	880.449	
8	19	26	+	89	44	56	+30	48	43	+	864.718	
8	19	27	+	92	36	51	+33	8	30	+	848.816	
8	19	28	+	95	39	36	+35	23	55	+	832.797	
8	19	29	+	98	54	24	+37	34	11	+	816.712	
8	19	30	+102	22	27		+39	38	23	+	800.617	

```
  8 19 31 +106  4 51   +41 35 30                          +  784.565
  8 19 32 +110  2 36   +43 24 24                          +  768.612
  8 19 33 +114 16 22   +45  3 52                          +  752.815
  8 19 34 +118 46 29   +46 32 32                          +  737.230
  8 19 35 +123 32 41   +47 49  2                          +  721.916
  8 19 36 +128 33 58   +48 52  0                          +  706.929
  8 19 37 +133 48 29   +49 40  7                          +  692.330  TWILIGHT
TOKAWA 108  8 19 37 39.365  N76.7184    1898.866     NE
  8 19 38 +139 13 32   +50 12 15                          +  678.175  TWILIGHT
  8 19 39 +144 45 35   +50 27 32                          +  664.522  TWILIGHT
  8 19 40 +150 20 35   +50 25 27                          +  651.431  TWILIGHT
  8 19 41 +155 54 12   +50  5 49                          +  638.957  TWILIGHT
  8 19 42 +161 22 14   +49 28 55                          +  627.156
  8 19 43 +166 40 59   +48 35 21                          +  616.085
  8 19 44 +171 47 32   +47 26  3                          +  605.795
  8 19 45 +176 39 47   +46  2  9                          +  596.339
  8 19 46 -178 43 29   +44 24 56                          +  587.765
  8 19 47 -174 22 42   +42 35 43                          +  580.121
  8 19 48 -170 17 43   +40 35 49                          +  573.448
  8 19 49 -166 27 54   +38 26 29                          +  567.788
  8 19 50 -162 52 18   +36  8 52                          +  563.176
BSANDS 100  8 19 50 54.480  N73.9185    1484.136     SE
  8 19 51 -159 29 49   +33 44  5                         +  559.642
  8 19 52 -156 19 16   +31 13  6                         +  557.214
  8 19 53 -153 19 23   +28 36 48                          +  555.912
  8 19 54 -150 28 59   +25 55 59                          +  555.754
  8 19 55 -147 46 54   +23 11 21                          +  556.748
BSANDS 100  8 19 55 24.703  E74.5559    1512.150     SE        **
  8 19 56 -145 12  2   +20 23 35                          +  558.900
  8 19 57 -142 43 22   +17 33 15                          +  562.207
  8 19 58 -140 19 56   +14 40 53                          +  566.660
  8 19 59 -138  0 49   +11 46 59                          +  572.245
  8 20  0 -135 45 11   + 8 52  1                          +  578.940
  8 20  1 -133 32 13   + 5 56 23                          +  586.718
  8 20  2 -131 21 10   + 3  0 32                          +  595.545
  8 20  3 -129 11 16   + 0  4 48                          +  605.381
  8 20  4 -127  1 50   - 2 50 24                          +  616.180
  8 20  5 -124 52  7   - 5 44 44                          +  627.893
  8 20  6 -122 41 27   - 8 37 50                          +  640.463
  8 20  7 -120 29  7   -11 29 20                          +  653.831
  8 20  8 -118 14 23   -14 18 53                          +  667.930
  8 20  9 -115 56 31   -17  6  6                          +  682.696
```

8	20	10	-113	34	44	-19	50	36			+	698.057	
8	20	11	-111	8	15	-22	31	59			+	713.938	
8	20	12	-108	36	13	-25	9	48			+	730.267	
8	20	13	-105	57	46	-27	43	35			+	746.966	
8	20	14	-103	11	59	-30	12	51			+	763.959	
8	20	15	-100	17	57	-32	37	1			+	781.168	
8	20	16	-	97	14	42	-34	55	30		+	798.516	
8	20	17	-	94	1	19	-37	7	38		+	815.927	
8	20	18	-	90	36	55	-39	12	41		+	833.325	
8	20	19	-	87	0	42	-41	9	52		+	850.637	
8	20	20	-	83	12	3	-42	58	20		+	867.789	
8	20	21	-	79	10	34	-44	37	13		+	884.713	
8	20	22	-	74	56	14	-46	5	33		+	901.340	
8	20	23	-	70	29	26	-47	22	27		+	917.607	
8	20	24	-	65	51	6	-48	27	1		+	933.449	
8	20	25	-	61	2	44	-49	18	26		+	948.810	
8	20	26	-	56	6	24	-49	56	3		+	963.633	
8	20	27	-	51	4	44	-50	19	22		+	977.865	
8	20	28	-	46	0	42	-50	28	9		+	991.458	
8	20	29	-	40	57	27	-50	22	22		+	1004.367	
8	20	30	-	35	58	10	-50	2	18		+	1016.548	
8	20	31	-	31	5	39	-49	28	26		+	1027.964	
8	20	32	-	26	22	21	-48	41	28		+	1038.581	
8	20	33	-	21	50	5	-47	42	15		+	1048.366	
8	20	34	-	17	30	9	-46	31	44		+	1057.293	
8	20	35	-	13	23	15	-45	10	52		+	1065.336	TWILIGHT
8	20	36	-	9	29	36	-43	40	41		+	1072.476	TWILIGHT
8	20	37	-	5	49	2	-42	2	7		+	1078.695	TWILIGHT
8	20	38	-	2	21	4	-40	16	4		+	1083.979	TWILIGHT
8	20	39	+	0	54	58	-38	23	22		+	1088.317	TWILIGHT
8	20	40	+	3	59	53	-36	24	47		+	1091.703	TWILIGHT
8	20	41	+	6	54	33	-34	20	58		+	1094.131	TWILIGHT
8	20	42	+	9	39	54	-32	12	33		+	1095.601	TWILIGHT
8	20	43	+	12	16	48	-30	0	3		+	1096.114	
8	20	44	+	14	46	10	-27	43	57		+	1095.675	
JOBURG	118		8	20	44	43.863		W54.7080		1674.112	NE	**	
8	20	45	+	17	8	49	-25	24	41		+	1094.292	
8	20	46	+	19	25	33	-23	2	36		+	1091.975	
8	20	47	+	21	37	8	-20	38	2		+	1088.735	
8	20	48	+	23	44	17	-18	11	17		+	1084.590	
8	20	49	+	25	47	40	-15	42	38		+	1079.556	
8	20	50	+	27	47	55	-13	12	19		+	1073.654	

```
 8 20 51 + 29 45 39   -10 40 32                          + 1066.905
 8 20 52 + 31 41 28   - 8  7 32                          + 1059.336
 8 20 53 + 33 35 53   - 5 33 30                          + 1050.972
 8 20 54 + 35 29 29   - 2 58 36                          + 1041.842
 8 20 55 + 37 22 50   - 0 23  4                          + 1031.978
  8 20 55  8  LONG.   + 37 39 38  PASS NO.   373 + 1030.414
 8 20 56 + 39 16 27   + 2 12 57                          + 1021.410
 8 20 57 + 41 10 54   + 4 49 14                          + 1010.176
 8 20 58 + 43  6 45   + 7 25 35                          +  998.310
 8 20 59 + 45  4 35   +10  1 48                          +  985.850
 8 21  0 + 47  5  2   +12 37 38                          +  972.835
 8 21  1 + 49  8 44   +15 12 50                          +  959.308
 8 21  2 + 51 16 24   +17 47  8                          +  945.310
 8 21  3 + 53 28 45   +20 20 13                          +  930.885
 8 21  4 + 55 46 36   +22 51 44                          +  916.079
 8 21  5 + 58 10 50   +25 21 18                          +  900.939
 8 21  6 + 60 42 23   +27 48 28                          +  885.512
 8 21  7 + 63 22 16   +30 12 42                          +  869.847
 8 21  8 + 66 11 32   +32 33 26                          +  853.995
 8 21  9 + 69 11 22   +34 50  0                          +  838.008
 8 21 10 + 72 22 56   +37  1 36                          +  821.938
 8 21 11 + 75 47 26   +39  7 24                          +  805.838
 8 21 12 + 79 26  0   +41  6 23                          +  789.764
 8 21 13 + 83 19 40   +42 57 28                          +  773.770
 8 21 14 + 87 29 13   +44 39 26                          +  757.913
 8 21 15 + 91 55  5   +46 10 58                          +  742.249
 8 21 16 + 96 37 10   +47 30 41                          +  726.837
 8 21 17 +101 34 37   +48 37 14                          +  711.734
 8 21 18 +106 45 53   +49 29 15                          +  696.998  TWILIGHT
 8 21 19 +112  8 26   +50  5 34                          +  682.688  TWILIGHT
 8 21 20 +117 38 59   +50 25 15                          +  668.861  TWILIGHT
 8 21 21 +123 13 33   +50 27 40                          +  655.577  TWILIGHT
 8 21 22 +128 47 50   +50 12 32                          +  642.892  TWILIGHT
 8 21 23 +134 17 36   +49 40  3                          +  630.863  TWILIGHT
TOKAWA 108  8 21 23 34.002  N76.8654   1782.874    SE
 8 21 24 +139 39  1   +48 50 43                          +  619.545
 8 21 25 +144 48 53   +47 45 23                          +  608.993
 8 21 26 +149 44 56   +46 25  9                          +  599.258
 8 21 27 +154 25 42   +44 51 16                          +  590.391
 8 21 28 +158 50 34   +43  5  3                          +  582.439
 8 21 29 +162 59 34   +41  7 48                          +  575.446
 8 21 30 +166 53 13   +39  0 47  /68                     +  569.454
```

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  8 21 31 +170 32 22  +36 45 14                          +  564.498
  8 21 32 +173 58  6  +34 22 13                          +  560.614
  8 21 33 +177 11 38  +31 52 45                          +  557.827
  8 21 34 -179 45 51  +29 17 45                          +  556.162
  8 21 35 -176 53  6  +26 38  2                          +  555.635
  8 21 36 -174  8 58  +23 54 19                          +  556.261
BSANDS 100  8 21 36 40.279  W73.5730    1463.459     SE          **
  8 21 37 -171 32 20  +21  7 18                          +  558.043
  8 21 38 -169  2  8  +18 17 33                          +  560.982
  8 21 39 -166 37 26  +15 25 39                          +  565.072
  8 21 40 -164 17 16  +12 32  5                          +  570.300
  8 21 41 -162  0 47  + 9 37 20                          +  576.646
BSANDS 100  8 21 41 59.693  S79.5420    1861.133     SE
  8 21 42 -159 47 11  + 6 41 49                          +  584.084
  8 21 43 -157 35 41  + 3 45 57                          +  592.583
  8 21 44 -155 25 32  + 0 50  7                          +  602.105
  8 21 45 -153 16  0  - 2  5 17                          +  612.607
  8 21 46 -151  6 25  - 4 59 55                          +  624.037
  8 21 47 -148 56  2  - 7 53 24                          +  636.343
  8 21 48 -146 44  9  -10 45 23                          +  649.467
  8 21 49 -144 30  4  -13 35 31                          +  663.343
  8 21 50 -142 13  2  -16 23 25                          +  677.907
  8 21 51 -139 52 18  -19  8 42                          +  693.087
  8 21 52 -137 27  3  -21 50 58                          +  708.813
  8 21 53 -134 56 28  -24 29 47                          +  725.009
  8 21 54 -132 19 41  -27  4 41                          +  741.600
  8 21 55 -129 35 49  -29 35 12                          +  758.508
  8 21 56 -126 43 55  -32  0 46                          +  775.657
  8 21 57 -123 43  3  -34 20 49                          +  792.968
  8 21 58 -120 32 17  -36 34 40                          +  810.367
  8 21 59 -117 10 41  -38 41 38                          +  827.776
  8 22  0 -113 37 28  -40 40 55                          +  845.121
  8 22  1 -109 51 56  -42 31 43                          +  862.329
  8 22  2 -105 53 38  -44 13  9                          +  879.331
  8 22  3 -101 42 27  -45 44 16                          +  896.058
  8 22  4 - 97 18 39  -47  4 10                          +  912.443
  8 22  5 - 92 43  2  -48 11 57                          +  928.424
  8 22  6 - 87 56 56  -49  6 46                          +  943.941
  8 22  7 - 83  2 18  -49 47 55                          +  958.937
  8 22  8 - 78  1 36  -50 14 52                          +  973.360
  8 22  9 - 72 57 46  -50 27 19                          +  987.159
  8 22 10 - 67 53 58  -50 25 10                          + 1000.287
```

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  8 22 11 - 62 53 20   -50  8 39                          + 1012.701
  8 22 12 - 57 58 48   -49 38 11                          + 1024.362
  8 22 13 - 53 12 55   -48 54 24                          + 1035.235
  8 22 14 - 48 37 42   -47 58  9                          + 1045.286
  8 22 15 - 44 14 33   -46 50 21                          + 1054.487
  8 22 16 - 40  4 19   -45 31 58                          + 1062.813  TWILIGHT
  8 22 17 - 36  7 20   -44  4  0                          + 1070.242  TWILIGHT
  8 22 18 - 32 23 30   -42 27 26                          + 1076.756  TWILIGHT
  8 22 19 - 28 52 25   -40 43  9                          + 1082.340  TWILIGHT
  8 22 20 - 25 33 28   -38 52  1                          + 1086.981  TWILIGHT
  8 22 21 - 22 25 50   -36 54 49                          + 1090.673  TWILIGHT
  8 22 22 - 19 28 41   -34 52 15                          + 1093.409  TWILIGHT
  8 22 23 - 16 41  6   -32 44 55                          + 1095.187  TWILIGHT
  8 22 24 - 14  2 10   -30 33 23                          + 1096.008
  8 22 25 - 11 31  1   -28 18  8                          + 1095.876
  8 22 26 -  9  6 47   -25 59 37                          + 1094.798
  8 22 27 -  6 48 39   -23 38 12                          + 1092.781
  8 22 28 -  4 35 51   -21 14 14                          + 1089.840
  8 22 29 -  2 27 40   -18 48  1                          + 1085.987
  8 22 30 -  0 23 25   -16 19 49                          + 1081.241
SANANA 116  8 22 30 11.309  S68.5038   2177.863     NE
  8 22 31 +  1 37 32   -13 49 55                          + 1075.620
  8 22 32 +  3 35 50   -11 18 30                          + 1069.145
  8 22 33 +  5 32  2   - 8 45 48                          + 1061.842
  8 22 34 +  7 26 44   - 6 12  2                          + 1053.736
  8 22 35 +  9 20 28   - 3 37 21                          + 1044.855
  8 22 36 + 11 13 49   - 1  1 59                          + 1035.228
SANANA 116  8 22 36 23.766  E60.5051   1766.801     NE          **
   8 22 36 23  LONG.   + 11 58 58  PASS NO.  374 + 1031.113
  8 22 37 + 13  7 17   + 1 33 54                          + 1024.889
  8 22 38 + 15  1 26   + 4 10  6                          + 1013.871
  8 22 39 + 16 56 51   + 6 46 25                          + 1002.209
  8 22 40 + 18 54  7   + 9 22 38                          +  989.941
  8 22 41 + 20 53 48   +11 58 33                          +  977.105
  8 22 42 + 22 56 35   +14 33 54                          +  963.743
  8 22 43 + 25  3  9   +17  8 24                          +  949.896
  8 22 44 + 27 14 12   +19 41 47                          +  935.607
  8 22 45 + 29 30 33   +22 13 42                          +  920.922
  8 22 46 + 31 53  3   +24 43 45                          +  905.886
  8 22 47 + 34 22 36   +27 11 31                          +  890.548
  8 22 48 + 37  0 13   +29 36 30                          +  874.956
  8 22 49 + 39 46 57   +31 58  8  170                     +  859.160
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  8 22 50 + 42 43 56   +34 15 47                          +   843.210
  8 22 51 + 45 52 20   +36 28 41                          +   827.160
  8 22 52 + 49 13 22   +38 36  0                          +   811.063
  8 22 53 + 52 48 11   +40 36 47                          +   794.972
  8 22 54 + 56 37 50   +42 29 58                          +   778.944
  8 22 55 + 60 43 13   +44 14 20                          +   763.033
  8 22 56 + 65  4 49   +45 48 38                          +   747.297
  8 22 57 + 69 42 42   +47 11 29                          +   731.793
  8 22 58 + 74 36 14   +48 21 31                          +   716.579
  8 22 59 + 79 44  5   +49 17 21                          +   701.714
  8 23  0 + 85  3 56   +49 57 48                          +   687.254  TWILIGHT
  8 23  1 + 90 32 41   +50 21 50                          +   673.260  TWILIGHT
  8 23  2 + 96  6 32   +50 28 43                          +   659.789  TWILIGHT
  8 23  3 +101 41 14   +50 18  6                          +   646.899  TWILIGHT
  8 23  4 +107 12 29   +49 50  4                          +   634.647  TWILIGHT
  8 23  5 +112 36 18   +49  5  0                          +   623.088
  8 23  6 +117 49 21   +48  3 43                          +   612.279
  8 23  7 +122 49  5   +46 47 14                          +   602.270
  8 23  8 +127 33 50   +45 16 46                          +   593.114
  8 23  9 +132  2 48   +43 33 37                          +   584.859
  8 23 10 +136 15 50   +41 39  7                          +   577.549
TOKAWA 108  8 23 10 16.120  N54.7466     925.838     SE
  8 23 11 +140 13 21   +39 34 31                          +   571.228
  8 23 12 +143 56  8   +37 21  5                          +   565.933
  8 23 13 +147 25 14   +34 59 54                          +   561.699
TOKAWA 108  8 23 13  3.922  E64.4726    1128.633     SE         **
  8 23 14 +150 41 47   +32 32  2                          +   558.556
  8 23 15 +153 47  3   +29 58 23                          +   556.528
  8 23 16 +156 42 13   +27 19 48                          +   555.635
  8 23 17 +159 28 28   +24 37  4                          +   555.891
  8 23 18 +162  6 57   +21 50 50                          +   557.304
  8 23 19 +164 38 43   +19  1 44                          +   559.875
  8 23 20 +167  4 46   +16 10 19                          +   563.600
  8 23 21 +169 26  3   +13 17  7                          +   568.468
  8 23 22 +171 43 25   +10 22 37                          +   574.462
  8 23 23 +173 57 42   + 7 27 14                          +   581.557
  8 23 24 +176  9 42   + 4 31 23                          +   589.725
  8 23 25 +178 20  9   + 1 35 29                          +   598.928
  8 23 26 -179 30 12   - 1 20  6                          +   609.125
  8 23 27 -177 20 40   - 4 15  0                          +   620.268
  8 23 28 -175 10 31   - 7  8 51                          +   632.305
  8 23 29 -172 59  4   -10  1 18                          +   645.178
```

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  8 23 30 -170 45 35  -12 51 59                          +  658.824
SAMOAI 114  8 23 30  1.016  N14.8021     679.471     SE
SAMOAI 114  8 23 30 30.988  E11.3559     678.177     SE        **
  8 23 31 -168 29 21  -15 40 32                          +  673.179
  8 23 32 -166  9 35  -18 26 34                          +  688.173
  8 23 33 -163 45 31  -21  9 42                          +  703.736
  8 23 34 -161 16 20  -23 49 29                          +  719.791
  8 23 35 -158 41 11  -26 25 29                          +  736.266
  8 23 36 -155 59  9  -28 57 13                          +  753.082
  8 23 37 -153  9 21  -31 24  9                          +  770.162
  8 23 38 -150 10 48  -33 45 42                          +  787.430
  8 23 39 -147  2 34  -36  1 14                          +  804.808
  8 23 40 -143 43 44  -38 10  4                          +  822.221
  8 23 41 -140 13 28  -40 11 25                          +  839.592
  8 23 42 -136 31  2  -42  4 30                          +  856.850
  8 23 43 -132 35 55  -43 48 25                          +  873.923
  8 23 44 -128 27 54  -45 22 15                          +  890.742
  8 23 45 -124  7 10  -46 45  6                          +  907.240
  8 23 46 -119 34 20  -47 56  3                          +  923.353
  8 23 47 -114 50 38  -48 54 13                          +  939.021
  8 23 48 -109 57 50  -49 38 53                          +  954.186
  8 23 49 -104 58 19  -50  9 27                          +  968.793
  8 23 50 - 99 54 55  -50 25 34                          +  982.793
  8 23 51 - 94 50 43  -50 27  5                          +  996.136
  8 23 52 - 89 48 54  -50 14  7                          + 1008.779
  8 23 53 - 84 52 31  -49 47  5                          + 1020.681
  8 23 54 - 80  4 12  -49  6 34                          + 1031.806
  8 23 55 - 75 26  6  -48 13 20                          + 1042.121
  8 23 56 - 70 59 47  -47  8 19                          + 1051.594
  8 23 57 - 66 46 14  -45 52 28                          + 1060.200
  8 23 58 - 62 45 53  -44 26 47                          + 1067.916  TWILIGHT
  8 23 59 - 58 58 46  -42 52 16                          + 1074.723  TWILIGHT
  9  0  0 - 55 24 32  -41  9 48                          + 1080.605  TWILIGHT
  9  0  1 - 52  2 36  -39 20 18                          + 1085.548  TWILIGHT
  9  0  2 - 48 52 13  -37 24 32                          + 1089.545  TWILIGHT
  9  0  3 - 45 52 32  -35 23 13                          + 1092.588  TWILIGHT
  9  0  4 - 43  2 39  -33 17  1                          + 1094.674  TWILIGHT
  9  0  5 - 40 21 38  -31  6 28                          + 1095.803
  9  0  6 - 37 48 37  -28 52  6                          + 1095.978
  9  0  7 - 35 22 44  -26 34 22                          + 1095.204
  9  0  8 - 33  3 10  -24 13 38                          + 1093.491
  9  0  9 - 30 49  7  -21 50 17                          + 1090.848
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  9   0 10 - 28 39 52   -19 24 36                          + 1087.290
  9   0 11 - 26 34 43   -16 56 54                          + 1082.833
  9   0 12 - 24 33  0   -14 27 24                          + 1077.495
  9   0 13 - 22 34  7   -11 56 22                          + 1071.297
  9   0 14 - 20 37 28   - 9 23 59                          + 1064.263
  9   0 15 - 18 42 27   - 6 50 29                          + 1056.417
  9   0 16 - 16 48 33   - 4 16  3                          + 1047.787
  9   0 17 - 14 55 11   - 1 40 52                          + 1038.402
SANANA 116  9  0 17 38.663  W64.9311   1937.842     NE          **
   9  0 17 38  LONG.   - 13 41 44  PASS NO.  375 + 1031.853
  9   0 18 - 13  1 50   + 0 54 53                          + 1028.294
  9   0 19 - 11  7 55   + 3 30 59                          + 1017.496
  9   0 20 -  9 12 54   + 6  7 15                          + 1006.042
  9   0 21 -  7 16 12   + 8 43 29                          +  993.970
  9   0 22 -  5 17 12   +11 19 28                          +  981.318
  9   0 23 -  3 15 18   +13 54 56                          +  968.125
  9   0 24 -  1  9 48   +16 29 38                          +  954.433
SANANA 116  9  0 24 32.380  N75.0880   2313.364     NE
  9   0 25 +  1  0  1   +19  3 18                          +  940.286
  9   0 26 +  3 14 55   +21 35 34                          +  925.727
  9   0 27 +  5 35 44   +24  6  5                          +  910.802
  9   0 28 +  8  3 22   +26 34 25                          +  895.558
HOLBRG 101  9  0 28 15.492  582.6493   2763.273     NE
  9   0 29 + 10 38 47   +29  0  7                          +  880.043
  9   0 30 + 13 23  3   +31 22 37                          +  864.308
  9   0 31 + 16 17 16   +33 41 17                          +  848.402
  9   0 32 + 19 22 36   +35 55 26                          +  832.379
  9   0 33 + 22 40 14   +38  4 13                          +  816.289
  9   0 34 + 26 11 22   +40  6 43                          +  800.188
  9   0 35 + 29 57  5   +42  1 54                          +  784.131
  9   0 36 + 33 58 18   +43 48 36                          +  768.173
  9   0 37 + 38 15 39   +45 25 34                          +  752.371
  9   0 38 + 42 49 19   +46 51 27                          +  736.782
  9   0 39 + 47 38 52   +48  4 53                          +  721.463
  9   0 40 + 52 43  7   +49  4 28                          +  706.474
  9   0 41 + 58  0  4   +49 48 57                          +  691.872  TWILIGHT
  9   0 42 + 63 26 47   +50 17 16                          +  677.716  TWILIGHT
  9   0 43 + 68 59 38   +50 28 36                          +  664.064  TWILIGHT
  9   0 44 + 74 34 27   +50 22 31                          +  650.975  TWILIGHT
  9   0 45 + 80  6 55   +49 58 56                          +  638.506  TWILIGHT
  9   0 46 + 85 32 55   +49 18 13                          +  626.712
  9   0 47 + 90 48 57   +48 21  2                          +  615.650
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  9   0 48 + 95 52 15   +47  8 22                          +   605.373
  9   0 49 +100 40 56   +45 41 25                          +   595.933
  9   0 50 +105 13 59   +44  1 25                          +   587.378
  9   0 51 +109 31  5   +42  9 44                          +   579.756
  9   0 52 +113 32 32   +40  7 39                          +   573.110
  9   0 53 +117 19  1   +37 56 24                          +   567.478
  9   0 54 +120 51 31   +35 37  8                          +   562.898
TOKAWA 108  9  0 54 19.437  W75.4850    1569.638     SE          **
  9   0 55 +124 11 13   +33 10 54                          +   559.401
  9   0 56 +127 19 16   +30 38 40                          +   557.012
  9   0 57 +130 16 56   +28  1 18                          +   555.753
  9   0 58 +133  5 22   +25 19 34                          +   555.640
  9   0 59 +135 45 46   +22 34 10                          +   556.683
TOKAWA 108  9  0 59 37.182  S78.0983    1709.068     SE
  9   1  0 +138 19 11   +19 45 45                          +   558.885
  9   1  1 +140 46 39   +16 54 53                          +   562.243
  9   1  2 +143  9  5   +14  2  5                          +   566.750
  9   1  3 +145 27 24   +11  7 51                          +   572.389
  9   1  4 +147 42 26   + 8 12 37                          +   579.138
  9   1  5 +149 54 58   + 5 16 50                          +   586.970
  9   1  6 +152  5 46   + 2 20 53                          +   595.851
  9   1  7 +154 15 34   - 0 34 51                          +   605.739
  9   1  8 +156 25  6   - 3 30  0                          +   616.590
  9   1  9 +158 35  4   - 6 24 12                          +   628.351
  9   1 10 +160 46  8   - 9 17  5                          +   640.966
  9   1 11 +162 59  4   -12  8 18                          +   654.376
  9   1 12 +165 14 34   -14 57 28                          +   668.515
  9   1 13 +167 33 23   -17 44 14                          +   683.316
  9   1 14 +169 56 19   -20 28 11                          +   698.707
  9   1 15 +172 24  9   -23  8 55                          +   714.615
  9   1 16 +174 57 44   -25 45 59                          +   730.966
  9   1 17 +177 37 58   -28 18 54                          +   747.682
  9   1 18 -179 34 14   -30 47  9                          +   764.687
  9   1 19 -176 37 56   -33 10 11                          +   781.903
  9   1 20 -173 32 12   -35 27 21                          +   799.254
  9   1 21 -170 16  5   -37 38  0                          +   816.663
  9   1 22 -166 48 43   -39 41 22                          +   834.054
  9   1 23 -163  9 21   -41 36 39                          +   851.354
  9   1 24 -159 17 25   -43 23  1                          +   868.491
  9   1 25 -155 12 36   -44 59 31                          +   885.395
  9   1 26 -150 54 57   -46 25 16                          +   901.999
  9   1 27 -146 25  0   -47 39 19                          +   918.239
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  9   1 28 -141 43 47   -48 40 48                          +  934.052
  9   1 29 -136 52 59   -49 28 57                          +  949.379
  9   1 30 -131 54 50   -50  3  7                          +  964.167
  9   1 31 -126 52  2   -50 22 54                          +  978.362
  9   1 32 -121 47 39   -50 28  4                          +  991.916
  9   1 33 -116 44 52   -50 18 43                          + 1004.783
  9   1 34 -111 46 47   -49 55  9                          + 1016.924
  9   1 35 -106 56 10   -49 17 56                          + 1028.297
  9   1 36 -102 15 16   -48 27 47                          + 1038.871
  9   1 37 - 97 45 50   -47 25 37                          + 1048.613
  9   1 38 - 93 28 59   -46 12 22                          + 1057.497
  9   1 39 - 89 25 16   -44 49  2                          + 1065.498  TWILIGHT
  9   1 40 - 85 34 51   -43 16 36                          + 1072.596  TWILIGHT
  9   1 41 - 81 57 25   -41 36  2                          + 1078.774  TWILIGHT
  9   1 42 - 78 32 28   -39 48 11                          + 1084.019  TWILIGHT
  9   1 43 - 75 19 16   -37 53 54                          + 1088.319  TWILIGHT
  9   1 44 - 72 16 59   -35 53 54                          + 1091.668  TWILIGHT
AGASTA 123  9  1 44 41.426  S55.5411   1697.003    NE
SNTAGO 122  9  1 44 33.083  S10.7874   1109.120    NE
  9   1 45 - 69 24 43   -33 48 51                          + 1094.062  TWILIGHT
SNTAGO 122  9  1 45 18.463  E11.9397   1114.468    NE         **
  9   1 46 - 66 41 35   -31 39 20                          + 1095.499  TWILIGHT
  9   1 47 - 64  6 40   -29 25 52                          + 1095.981
  9   1 48 - 61 39  5   -27  8 55                          + 1095.513
  9   1 49 - 59 18  1   -24 48 55                          + 1094.102
AGASTA 123  9  1 49 30.043  E56.4812   1725.436    NE         **
  9   1 50 - 57  2 40   -22 26 11                          + 1091.760
  9   1 51 - 54 52 18   -20  1  4                          + 1088.498
  9   1 52 - 52 46 12   -17 33 51                          + 1084.331
  9   1 53 - 50 43 42   -15  4 47                          + 1079.279
  9   1 54 - 48 44 11   -12 34  8                          + 1073.359
  9   1 55 - 46 47  3   -10  2  5                          + 1066.596
  9   1 56 - 44 51 42   - 7 28 52                          + 1059.013
  9   1 57 - 42 57 35   - 4 54 40                          + 1050.637
  9   1 58 - 41  4 10   - 2 19 41                          + 1041.497
   9  1 58 53  LONG.    - 39 22 27  PASS NO.   376 + 1032.633
  9   1 59 - 39 10 53   + 0 15 54                          + 1031.624
  9   2  0 - 37 17 11   + 2 51 54                          + 1021.050
  9   2  1 - 35 22 32   + 5 28  7                          + 1009.809
  9   2  2 - 33 26 20   + 8  4 21                          +  997.936
  9   2  3 - 31 28  1   +10 40 22                          +  985.472
  9   2  4 - 29 26 56   +13 15 57                          +  972.453
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  9   2   5 -  27 22 26   +15 50 50                          +   958.921
  9   2   6 -  25 13 49   +18 24 44                          +   944.920
  9   2   7 -  23  0 19   +20 57 21                          +   930.491
  9   2   8 -  20 41  8   +23 28 18                          +   915.682
  9   2   9 -  18 15 21   +25 57 11                          +   900.538
  9   2  10 -  15 42  3   +28 23 33                          +   885.107
  9   2  11 -  13  0 10   +30 46 52                          +   869.438
  9   2  12 -  10  8 39   +33  6 32                          +   853.582
  9   2  13 -   7  6 18   +35 21 51                          +   837.590
  9   2  14 -   3 51 58   +37 32  2                          +   821.515
  9   2  15 -   0 24 27   +39 36 12                          +   805.410
  9   2  16 +   3 17 23   +41 33 19                          +   789.331
  9   2  17 +   7 14 30   +43 22 16                          +   773.331
HDLBRG 101   9   2 17 21.249   S42.6061     998.655     NE
  9   2  18 +  11 27 36   +45  1 49                          +   757.469
  9   2  19 +  15 57  1   +46 30 38                          +   741.801
HDLBRG 101   9   2 21 39.153   E72.4718    1702.462     NE          **
  9   2  20 +  20 42 31   +47 47 21                          +   726.384
  9   2  21 +  25 43  4   +48 50 35                          +   711.277
  9   2  22 +  30 56 55   +49 39  2                          +   696.539   TWILIGHT
  9   2  23 +  36 21 21   +50 11 35                          +   682.227   TWILIGHT
  9   2  24 +  41 52 55   +50 27 20                          +   668.401   TWILIGHT
  9   2  25 +  47 27 34   +50 25 45                          +   655.119   TWILIGHT
  9   2  26 +  53  0 57   +50  6 40                          +   642.438   TWILIGHT
  9   2  27 +  58 28 55   +49 30 19                          +   630.414   TWILIGHT
  9   2  28 +  63 47 45   +48 37 18                          +   619.106
  9   2  29 +  68 54 29   +47 28 33                          +   608.565
HDLBRG 101   9   2 27  7.940   E79.7324    3497.019     SE          **
  9   2  30 +  73 47  2   +46  5 10                          +   598.845
  9   2  31 +  78 24  8   +44 28 26                          +   589.996
  9   2  32 +  82 45 18   +42 39 40                          +   582.066
  9   2  33 +  86 50 43   +40 40 10                          +   575.097
  9   2  34 +  90 40 58   +38 31 11                          +   569.133
  9   2  35 +  94 16 59   +36 13 54                          +   564.210
  9   2  36 +  97 39 51   +33 49 23                          +   560.360
  9   2  37 + 100 50 47   +31 18 37                          +   557.612
  9   2  38 + 103 51  1   +28 42 30                          +   555.989
  9   2  39 + 106 41 45   +26  1 50                          +   555.507
  9   2  40 + 109 24  8   +23 17 19                          +   556.180
  9   2  41 + 111 59 16   +20 29 37                          +   558.012
  9   2  42 + 114 28 11   +17 39 18                          +   561.003
  9   2  43 + 116 51 50   +14 46 57                          +   565.146
```

9	2	44	+119	11	9	+11	53	1	+	570.427	
9	2	45	+121	26	58	+ 8	57	59	+	576.828	
9	2	46	+123	40	6	+ 6	2	17	+	584.321	
9	2	47	+125	51	18	+ 3	6	18	+	592.874	
9	2	48	+128	1	19	+ 0	10	27	+	602.449	
9	2	49	+130	10	53	- 2	44	55	+	613.001	
9	2	50	+132	20	42	- 5	39	26	+	624.481	
9	2	51	+134	31	27	- 8	32	43	+	636.834	
9	2	52	+136	43	52	-11	24	26	+	650.001	
9	2	53	+138	58	40	-14	14	13	+	663.917	
9	2	54	+141	16	37	-17	1	41	+	678.517	
9	2	55	+143	38	27	-19	46	26	+	693.730	
9	2	56	+146	4	59	-22	28	5	+	709.484	
9	2	57	+148	37	4	-25	6	11	+	725.703	
9	2	58	+151	15	35	-27	40	15	+	742.312	
9	2	59	+154	1	25	-30	9	47	+	759.234	
9	3	0	+156	55	30	-32	34	15	+	776.391	
9	3	1	+159	58	49	-34	53	1	+	793.707	
9	3	2	+163	12	16	-37	5	26	+	811.104	
9	3	3	+166	36	46	-39	10	46	+	828.508	
9	3	4	+170	13	5	-41	8	13	+	845.843	
9	3	5	+174	1	52	-42	56	58	+	863.037	
9	3	6	+178	3	30	-44	36	5	+	880.021	
9	3	7	-177	41	59	-46	4	40	+	896.724	
9	3	8	-173	14	58	-47	21	47	+	913.084	
9	3	9	-168	36	23	-48	26	32	+	929.036	
9	3	10	-163	47	44	-49	18	7	+	944.521	
9	3	11	-158	51	6	-49	55	52	+	959.483	
9	3	12	-153	49	6	-50	19	18	+	973.869	
9	3	13	-148	44	44	-50	28	9	+	987.629	
9	3	14	-143	41	10	-50	22	25	+	1000.716	
9	3	15	-138	41	33	-50	2	22	+	1013.089	
9	3	16	-133	48	46	-49	28	29	+	1024.709	
9	3	17	-129	5	11	-48	41	30	+	1035.538	
9	3	18	-124	32	42	-47	42	14	+	1045.547	
9	3	19	-120	12	35	-46	31	38	+	1054.705	
9	3	20	-116	5	32	-45	10	43	+	1062.988	TWILIGHT
9	3	21	-112	11	45	-43	40	27	+	1070.376	TWILIGHT
9	3	22	-108	31	6	-42	1	49	+	1076.848	TWILIGHT
9	3	23	-105	3	4	-40	15	41	+	1082.392	TWILIGHT
9	3	24	-101	47	0	-38	22	55	+	1086.995	TWILIGHT
9	3	25	- 98	42	3	-36	24	16	+	1090.650	TWILIGHT

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  9   3 26  -  95 47 23   -34 20 24                          +  1093.350  TWILIGHT
  9   3 27  -  93  2  3   -32 11 56                          +  1095.095  TWILIGHT
  9   3 28  -  90 25  9   -29 59 25                          +  1095.884
  9   3 29  -  87 55 50   -27 43 18                          +  1095.723
  9   3 30  -  85 33 13   -25 24  1                          +  1094.616
  9   3 31  -  83 16 32   -23  1 56                          +  1092.575
  9   3 32  -  81  4 59   -20 37 23                          +  1089.610
  9   3 33  -  78 57 54   -18 10 41                          +  1085.736
LIMAPU 124   9   3 33 52.683   S27.2247    1193.664     NE
  9   3 34  -  76 54 35   -15 42  4                          +  1080.970
  9   3 35  -  74 54 23   -13 11 48                          +  1075.331
LIMAPU 124   9   3 35 33.558   E21.8886    1141.905     NE          **
  9   3 36  -  72 56 44   -10 40  6                          +  1068.842
  9   3 37  -  71  1  0   -  8  7 11                          +  1061.525
  9   3 38  -  69  6 40   -  5 33 14                          +  1053.406
  9   3 39  -  67 13  9   -  2 58 27                          +  1044.514
  9   3 40  -  65 19 54   -  0 23  1                          +  1034.878
   9  3 40   8  LONG.   -  65  3  6  PASS NO.   377 +  1033.348
  9   3 41  -  63 26 23   +  2 12 52                          +  1024.531
  9   3 42  -  61 32  3   +  4 49  0                          +  1013.506
  9   3 43  -  59 36 19   +  7 25 13                          +  1001.838
  9   3 44  -  57 38 37   +10  1 16                          +   989.565
  9   3 45  -  55 38 20   +12 36 57                          +   976.725
  9   3 46  -  53 34 47   +15 11 59                          +   963.358
PANTIG 120   9   3 46 45.139   E54.3390    1467.299     NE          **
  9   3 47  -  51 27 19   +17 46  8                          +   949.507
  9   3 48  -  49 15 10   +20 19  3                          +   935.215
  9   3 49  -  46 57 32   +22 50 24                          +   920.526
  9   3 50  -  44 33 33   +25 19 49                          +   905.486
  9   3 51  -  42  2 17   +27 46 49                          +   890.144
  9   3 52  -  39 22 44   +30 10 55                          +   874.548
  9   3 53  -  36 33 49   +32 31 32                          +   858.747
  9   3 54  -  33 34 24   +34 47 59                          +   842.793
  9   3 55  -  30 23 17   +36 59 30                          +   826.738
  9   3 56  -  26 59 17   +39  5 15                          +   810.635
  9   3 57  -  23 21 16   +41  4 13                          +   794.539
  9   3 58  -  19 28 13   +42 55 20                          +   778.505
  9   3 59  -  15 19 19   +44 37 22                          +   762.589
  9   4  0  -  10 54  8   +46  9  2                          +   746.848
HDLBRG 101   9   4  2 54.380   W31.7807     810.741     NE          **
  9   4  1  -   6 12 48   +47 28 57                          +   731.339
  9   4  2  -   1 16  3   +48 35 44                          +   716.122
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  9   4   3 +   3 54 31   +49 28  5                          +   701.253
HDLBRG 101   9   4   3 53.686   N 6.2885     691.473     NE
  9   4   4 +   9 16 27   +50  4 48                          +   686.792  TWILIGHT
  9   4   5 +  14 46 29   +50 24 56                          +   672.797  TWILIGHT
  9   4   6 +  20 20 38   +50 27 50                          +   659.327  TWILIGHT
  9   4   7 +  25 54 41   +50 13 14                          +   646.441  TWILIGHT
  9   4   8 +  31 24 21   +49 41 18                          +   634.194  TWILIGHT
  9   4   9 +  36 45 47   +48 52 31                          +   622.644
  9   4  10 +  41 55 50   +47 47 44                          +   611.845
HDLBRG 101   9   4   8 23.352   E72.1013    1867.935     SE         **
  9   4  11 +  46 52  8   +46 28  2                          +   601.850
  9   4  12 +  51 33 15   +44 54 38                          +   592.712
  9   4  13 +  55 58 30   +43  8 52                          +   584.476
  9   4  14 +  60  7 55   +41 12  2                          +   577.191
  9   4  15 +  64  1 59   +39  5 24                          +   570.897
  9   4  16 +  67 41 33   +36 50 10                          +   565.633
  9   4  17 +  71  7 42   +34 27 26                          +   561.434
  9   4  18 +  74 21 36   +31 58 12                          +   558.329
  9   4  19 +  77 24 30   +29 23 24                          +   556.342
  9   4  20 +  80 17 34   +26 43 50                          +   555.493
  9   4  21 +  83  2  0   +24  0 14                          +   555.796
  9   4  22 +  85 38 55   +21 13 18                          +   557.258
  9   4  23 +  88  9 21   +18 23 36                          +   559.880
  9   4  24 +  90 34 18   +15 31 43                          +   563.658
  9   4  25 +  92 54 40   +12 38  8                          +   568.580
  9   4  26 +  95 11 20   + 9 43 19                          +   574.628
  9   4  27 +  97 25  6   + 6 47 44                          +   581.778
  9   4  28 +  99 36 45   + 3 51 45                          +   590.000
  9   4  29 + 101 47  2   + 0 55 48                          +   599.257
  9   4  30 + 103 56 40   - 1 59 46                          +   609.506
  9   4  31 + 106  6 23   - 4 54 34                          +   620.699
  9   4  32 + 108 16 51   - 7 48 15                          +   632.783
  9   4  33 + 110 28 48   -10 40 27                          +   645.700
  9   4  34 + 112 42 58   -13 30 48                          +   659.388
  9   4  35 + 115  0  4   -16 18 56                          +   673.780
  9   4  36 + 117 20 52   -19  4 28                          +   688.807
  9   4  37 + 119 46 10   -21 47  0                          +   704.398
  9   4  38 + 122 16 49   -24 26  5                          +   720.479
  9   4  39 + 124 53 38   -27  1 17                          +   736.973
  9   4  40 + 127 37 33   -29 32  5                          +   753.804
OOMERA 119   9   4  40 38.250   W47.3289    1064.560     SE         **
  9   4  41 + 130 29 30   -31 57 56                          +   770.895
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  9   4 42 +133 30 26   -34 18 15                          +  788.168
  9   4 43 +136 41 17   -36 32 24                          +  805.547
OOMERA 119   9   4 43   1.436   541.4806    1031.951     SE
  9   4 44 +140  2 58   -38 39 38                          +  822.956
  9   4 45 +143 36 18   -40 39 13                          +  840.318
  9   4 46 +147 21 57   -42 30 17                          +  857.563
  9   4 47 +151 20 23   -44 11 58                          +  874.619
  9   4 48 +155 31 45   -45 43 20                          +  891.416
  9   4 49 +159 55 45   -47  3 27                          +  907.889
  9   4 50 +164 31 37   -48 11 25                          +  923.974
  9   4 51 +169 17 59   -49  6 25                          +  939.611
  9   4 52 +174 12 56   -49 47 43                          +  954.742
  9   4 53 +179 13 57   -50 14 47                          +  969.314
  9   4 54 -175 41 54   -50 27 18                          +  983.275
  9   4 55 -170 37 45   -50 25 13                          +  996.578
  9   4 56 -165 36 48   -50  8 43                          + 1009.180
  9   4 57 -160 41 58   -49 38 14                          + 1021.041
  9   4 58 -155 55 49   -48 54 26                          + 1032.123
  9   4 59 -151 20 22   -47 58  8                          + 1042.394
  9   5  0 -146 57  1   -46 50 16                          + 1051.825
  9   5  1 -142 46 37   -45 31 49                          + 1060.388
  9   5  2 -138 49 30   -44  3 47                          + 1068.062  TWILIGHT
  9   5  3 -135  5 34   -42 27  8                          + 1074.828  TWILIGHT
  9   5  4 -131 34 25   -40 42 47                          + 1080.669  TWILIGHT
  9   5  5 -128 15 25   -38 51 35                          + 1085.574  TWILIGHT
  9   5  6 -125  7 46   -36 54 19                          + 1089.534  TWILIGHT
  9   5  7 -122 10 36   -34 51 41                          + 1092.541  TWILIGHT
  9   5  8 -119 23  2   -32 44 18                          + 1094.592  TWILIGHT
  9   5  9 -116 44  8   -30 32 44                          + 1095.689
  9   5 10 -114 13  0   -28 17 28                          + 1095.834
  9   5 11 -111 48 47   -25 58 56                          + 1095.033
  9   5 12 -109 30 41   -23 37 31                          + 1093.293
  9   5 13 -107 17 57   -21 13 34                          + 1090.626
  9   5 14 -105  9 50   -18 47 23                          + 1087.046
  9   5 15 -103  5 38   -16 19 14                          + 1082.569
  9   5 16 -101  4 44   -13 49 22                          + 1077.213
  9   5 17 - 99  6 31   -11 18  1                          + 1070.999
  9   5 18 - 97 10 23   - 8 45 24                          + 1063.950
  9   5 19 - 95 15 46   - 6 11 43                          + 1056.092
  9   5 20 - 93 22  7   - 3 37  9                          + 1047.450
  9   5 21 - 91 28 52   - 1  1 54                          + 1038.056
   9  5 21 23  LONG.   - 90 43 46  PASS NO.   378 + 1034.032
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  9  5 22 - 89 35 31  + 1 33 51                                  + 1027.940
  9  5 23 - 87 41 27  + 4  9 55                                  + 1017.134
2RSTON  99  9  5 23 31.956  S88.6970   3581.136    NE
  9  5 24 - 85 46 10  + 6 46  6                                  + 1005.674
  9  5 25 - 83 49  3  + 9 22 11                                  +  993.597
  9  5 26 - 81 49 29  +11 57 56                                  +  980.939
CPCAN1 107  9  5 26 36.073  S68.4589   1997.298    NE
  9  5 27 - 79 46 52  +14 33  7                                  +  967.742
PNSTAT  96  9  5 27 54.412  S83.6872   2980.616    NE
  9  5 28 - 77 40 29  +17  7 28                                  +  954.046
PORSPG 117  9  5 28 59.238  S71.1123   2073.464    NE
BELVOR 113  9  5 28 15.032  S79.8209   2651.119    NE
ABDEEN 112  9  5 28 44.118  S79.2845   2597.323    NE
  9  5 29 - 75 29 38  +19 40 41                                  +  939.895
FTMONM 104  9  5 29 38.933  S77.2241   2424.520    NE
  9  5 30 - 73 13 30  +22 12 26                                  +  925.331
LINCON 105  9  5 30 43.883  S76.9859   2378.010    NE
  9  5 31 - 70 51 15  +24 42 19                                  +  910.402
  9  5 32 - 68 21 58  +27  9 56                                  +  895.155
CPCAN1 107  9  5 32 26.015  E63.5929   1654.539    NE        **
  9  5 33 - 65 44 40  +29 34 46                                  +  879.636
  9  5 34 - 62 58 17  +31 56 17                                  +  863.896
  9  5 35 - 60  1 41  +34 13 49                                  +  847.985
PORSPG 117  9  5 35 27.207  E69.8042   1833.284    NE        **
ARKANS 109  9  5 35 20.821  E87.9258   3163.267    NE        **
2RSTON  99  9  5 35 11.757  E83.7130   2763.706    NE        **
  9  5 36 - 56 53 43  +36 26 37                                  +  831.956
  9  5 37 - 53 33 11  +38 33 53                                  +  815.862
BELVOR 113  9  5 37  3.756  E79.0659   2329.754    NE        **
ABDEEN 112  9  5 37 26.498  E79.2058   2327.440    NE        **
FTMONM 104  9  5 37 50.084  E78.2800   2249.068    NE        **
  9  5 38 - 49 58 54  +40 34 38                                  +  799.755
PNSTAT  96  9  5 38  6.687  E83.3378   2631.622    NE        **
  9  5 39 - 46  9 51  +42 27 49                                  +  783.692
LINCON 105  9  5 39  4.777  E80.1890   2345.632    NE        **
  9  5 40 - 42  5  7  +44 12 16                                  +  767.729
  9  5 41 - 37 44 12  +45 46 40                                  +  751.922
  9  5 42 - 33  7  2  +47  9 42                                  +  736.327
HOLBRG 101  9  5 44  9.833  W83.5567   2444.272    NE        **
  9  5 43 - 28 14 12  +48 19 58                                  +  721.005
  9  5 44 - 23  7  3  +49 16  7                                  +  706.012
  9  5 45 - 17 47 51  +49 56 56                                  +  691.408  TWILIGHT
```

```
  9   5 46 -  12 19 38   +50 21 23                          +   677.251  TWILIGHT
  9   5 47 -   6 46 14   +50 28 45                          +   663.600  TWILIGHT
  9   5 48 -   1 11 50   +50 18 40                          +   650.514  TWILIGHT
  9   5 49 +   4 19 17   +49 51 10                          +   638.049  TWILIGHT
HDLBRG 101   9   5 49 48.610   S 1.5846     628.089     SE
  9   5 50 +   9 43  6   +49  6 40                          +   626.263
  9   5 51 +  14 56 16   +48  5 55                          +   615.211
HDLBRG 101   9   5 49 38.764   W 3.1104     601.031     SE         **
  9   5 52 +  19 56 15   +46 49 58                          +   604.947
  9   5 53 +  24 41 19   +45 20  0                          +   595.523
  9   5 54 +  29 10 39   +43 37 19                          +   586.988
  9   5 55 +  33 24  6   +41 43 14                          +   579.388
  9   5 56 +  37 22  2   +39 39  1                          +   572.769
  9   5 57 +  41  5 14   +37 25 55                          +   567.167
  9   5 58 +  44 34 44   +35  5  2                          +   562.621
  9   5 59 +  47 51 41   +32 37 24                          +   559.161
  9   6  0 +  50 57 18   +30  3 58                          +   556.812
  9   6  1 +  53 52 48   +27 25 34                          +   555.597
  9   6  2 +  56 39 22   +24 42 57                          +   555.530
  9   6  3 +  59 18  8   +21 56 48                          +   556.622
  9   6  4 +  61 50  9   +19  7 45                          +   558.874
  9   6  5 +  64 16 27   +16 16 22                          +   562.285
  9   6  6 +  66 37 56   +13 23 10                          +   566.845
  9   6  7 +  68 55 29   +10 28 37                          +   572.539
  9   6  8 +  71  9 56   + 7 33  9                          +   579.344
  9   6  9 +  73 22  6   + 4 37 13                          +   587.230
  9   6 10 +  75 32 41   + 1 41 12                          +   596.165
  9   6 11 +  77 42 27   - 1 14 32                          +   606.105
  9   6 12 +  79 52  5   - 4  9 36                          +   617.006
  9   6 13 +  82  2 20   - 7  3 39                          +   628.815
  9   6 14 +  84 13 53   - 9 56 18                          +   641.477
  9   6 15 +  86 27 26   -12 47 12                          +   654.928
  9   6 16 +  88 43 45   -15 35 59                          +   669.107
  9   6 17 +  91  3 34   -18 22 17                          +   683.941
  9   6 18 +  93 27 41   -21  5 40                          +   699.363
  9   6 19 +  95 56 55   -23 45 43                          +   715.297
  9   6 20 +  98 32  7   -26 22  0                          +   731.669
  9   6 21 + 101 14 11   -28 54  1                          +   748.402
  9   6 22 + 104  4  4   -31 21 14                          +   765.418
  9   6 23 + 107  2 41   -33 43  4                          +   782.642
  9   6 24 + 110 10 59   -35 58 54                          +   799.994
  9   6 25 + 113 29 53   -38  8  0   / 82                   +   817.400
```

9	6	26	+117	0	15	-40	9	38				+	834.784	
9	6	27	+120	42	48	-42	2	59				+	852.072	
9	6	28	+124	38	4	-43	47	9				+	869.193	
9	6	29	+128	46	14	-45	21	15				+	886.077	
9	6	30	+133	7	11	-46	44	20				+	902.657	
9	6	31	+137	40	15	-47	55	28				+	918.869	
9	6	32	+142	24	13	-48	53	49				+	934.652	
9	6	33	+147	17	19	-49	38	38				+	949.947	
9	6	34	+152	17	9	-50	9	20				+	964.699	
9	6	35	+157	20	53	-50	25	32				+	978.856	
9	6	36	+162	25	25	-50	27	6				+	992.371	
9	6	37	+167	27	33	-50	14	11				+	1005.198	
9	6	38	+172	24	14	-49	47	9				+	1017.296	
9	6	39	+177	12	50	-49	6	36				+	1028.627	
9	6	40	-178	8	49	-48	13	20				+	1039.158	
9	6	41	-173	42	18	-47	8	15				+	1048.857	
9	6	42	-169	28	34	-45	52	20				+	1057.698	
9	6	43	-165	28	4	-44	26	35				+	1065.657	TWILIGHT
9	6	44	-161	40	51	-42	51	59				+	1072.714	TWILIGHT
9	6	45	-158	6	32	-41	9	27				+	1078.852	TWILIGHT
9	6	46	-154	44	34	-39	19	52				+	1084.057	TWILIGHT
9	6	47	-151	34	8	-37	24	2				+	1088.319	TWILIGHT
9	6	48	-148	34	27	-35	22	40				+	1091.632	TWILIGHT
9	6	49	-145	44	34	-33	16	25				+	1093.991	TWILIGHT
9	6	50	-143	3	34	-31	5	50				+	1095.395	TWILIGHT
9	6	51	-140	30	35	-28	51	26				+	1095.846	
9	6	52	-138	4	43	-26	33	41				+	1095.350	
9	6	53	-135	45	11	-24	12	57				+	1093.913	
9	6	54	-133	31	11	-21	49	36				+	1091.546	
9	6	55	-131	21	59	-19	23	57				+	1088.261	
9	6	56	-129	16	53	-16	56	17				+	1084.074	
9	6	57	-127	15	15	-14	26	50				+	1079.003	
9	6	58	-125	16	26	-11	55	51				+	1073.067	
9	6	59	-123	19	51	-	9	23	33			+	1066.289	
9	7	0	-121	24	56	-	6	50	8			+	1058.692	
9	7	1	-119	31	6	-	4	15	48			+	1050.305	
9	7	2	-117	37	50	-	1	40	44			+	1041.155	
9	7	2	38	LONG.		-116	24	29		PASS NO.	379	+	1034.756	
9	7	3	-115	44	34	+	0	54	54			+	1031.273	
9	7	4	-113	50	46	+	3	30	52			+	1020.691	
9	7	5	-111	55	53	+	6	7	0			+	1009.443	
9	7	6	-109	59	18	+	8	43	5			+	997.565	

```
  9  7  7 -108  0 27  +11 18 54                                  +  985.095
WHITES 111  9  7  7 37.539  S79.0797   2645.214    NE
  9  7  8 -105 58 41  +13 54 13                                  +  972.071
BOLDER  95  9  7  8 21.230  S85.1916   3140.141    NE
  9  7  9 -103 53 22  +16 28 46                                  +  958.536
  9  7 10 -101 43 44  +19  2 15                                  +  944.530
  9  7 11 - 99 29  3  +21 34 21                                  +  930.098
FTSILL 110  9  7 11 27.778  S62.9884   1687.245    NE
  9  7 12 - 97  8 29  +24  4 43                                  +  915.284
  9  7 13 - 94 41  7  +26 32 54                                  +  900.136
CPCAN1 107  9  7 13 41.221  W60.9977   1566.243    NE         **
  9  7 14 - 92  5 59  +28 58 27                                  +  884.700
ARKANS 109  9  7 14 29.547  S35.8483   1049.668    NE
UWISCN 102  9  7 14 53.236  S64.6590   1664.210    NE
  9  7 15 - 89 22  3  +31 20 49                                  +  869.027
2RSTON  99  9  7 15 55.899  S 9.9468    865.706    NE
UILNOS  97  9  7 15 23.908  S51.0972   1265.881    NE
  9  7 16 - 86 28 13  +33 39 22                                  +  853.165
PDRSPG 117  9  7 16 42.392  W49.0053   1196.942    NE         **
WHITES 111  9  7 16  1.070  E75.5649   2170.242    NE         **
FTSILL 110  9  7 16 26.407  E62.3985   1544.220    NE         **
ARKANS 109  9  7 16 36.027  E37.7550   1031.950    NE         **
GOLDST 103  9  7 16 46.141  E88.6346   3232.468    NE         **
2RSTON  99  9  7 16 26.922  E10.8211    859.474    NE         **
  9  7 17 - 83 23 19  +35 53 25                                  +  837.169
CPCAN1 107  9  7 17 51.029  N58.4710   1387.196    NE
LANGLY 106  9  7 17 33.417  W32.7767    962.631    NE         **
  9  7 18 - 80  6  8  +38  2  7                                  +  821.088
BPOINT 126  9  7 18 51.612  N11.8755    822.829    NE
BELVOR 113  9  7 18 50.912  N 9.3420    817.017    NE
PNSTAT  96  9  7 18 38.511  S12.7050    828.343    NE
BPOINT 126  9  7 18 11.155  W16.0605    847.339    NE         **
BELVOR 113  9  7 18 19.024  W12.7991    834.330    NE         **
ABDEEN 112  9  7 18 41.807  W10.9207    823.070    NE         **
  9  7 19 - 76 35 32  +40  4 35                                  +  804.977
PDRSPG 117  9  7 19 17.423  N41.1407   1020.759    NE
ABDEEN 112  9  7 19  8.380  N 7.6697    809.147    NE
LANGLY 106  9  7 19  3.127  N25.7420    881.365    NE
FTMONM 104  9  7 19 41.298  N10.1798    805.153    NE
FTMONM 104  9  7 19  5.352  W15.0210    828.642    NE         **
UILNOS  97  9  7 19  0.696  E57.2567   1326.515    NE         **
PNSTAT  96  9  7 19 21.934  E17.3782    832.411    NE         **
```

```
BOLDER  95  9  7 19  1.335  E83.9229   2694.362    NE        **
  9  7 20 - 72 50 24  +41 59 46                     +   788.892
LINCON 105  9  7 20 20.416   S 0.0984    783.421    NE
LINCON 105  9  7 20 20.045   W 0.2870    783.528    NE        **
UWISCN 102  9  7 20 35.721  E71.8969   1822.853    NE        **
  9  7 21 - 68 49 48  +43 46 32                     +   772.887
  9  7 22 - 64 33  8  +45 23 36                     +   757.019
  9  7 23 - 60  0 11  +46 49 38                     +   741.346
  9  7 24 - 55 11 21  +48  3 16                     +   725.925
  9  7 25 - 50  7 47  +49  3  9                     +   710.814
  9  7 26 - 44 51 30  +49 47 59                     +   696.073  TWILIGHT
  9  7 27 - 39 25 21  +50 16 43                     +   681.760  TWILIGHT
  9  7 28 - 33 52 59  +50 28 31                     +   667.934  TWILIGHT
  9  7 29 - 28 18 30  +50 22 56                     +   654.654  TWILIGHT
  9  7 30 - 22 46 14  +49 59 53                     +   641.977  TWILIGHT
  9  7 31 - 17 20 15  +49 19 43                     +   629.961  TWILIGHT
  9  7 32 - 12  4  7  +48 23  5                     +   618.661
  9  7 33 -  7  0 37  +47 10 57                     +   608.133
  9  7 34 -  2 11 38  +45 44 30                     +   598.428
  9  7 35 +  2 21 47  +44  4 59                     +   589.598
  9  7 36 +  6 39 16  +42 13 44                     +   581.689
HDLBRG 101  9  7 36 30.048  S62.8588   1110.979    SE
  9  7 37 + 10 41  8  +40 12  3                     +   574.747
  9  7 38 + 14 28  2  +38  1  9                     +   568.812
  9  7 39 + 18  0 57  +35 42 11                     +   563.921
  9  7 40 + 21 21  1  +33 16 13                     +   560.108
  9  7 41 + 24 29 27  +30 44 12                     +   557.399
  9  7 42 + 27 27 26  +28  7  0                     +   555.819
  9  7 43 + 30 16 13  +25 25 25                     +   555.383
  9  7 44 + 32 56 54  +22 40  7                     +   556.103
  9  7 45 + 35 30 35  +19 51 45                     +   557.986
  9  7 46 + 37 58 16  +17  0 55                     +   561.029
  9  7 47 + 40 20 55  +14  8  7                     +   565.226
  9  7 48 + 42 39 26  +11 13 51                     +   570.562
  9  7 49 + 44 54 38  + 8 18 34                     +   577.018
  9  7 50 + 47  7 19  + 5 22 41                     +   584.565
  9  7 51 + 49 18 16  + 2 26 37                     +   593.173
  9  7 52 + 51 28 12  - 0 29 15                     +   602.801
  9  7 53 + 53 37 50  - 3 24 34                     +   613.404
  9  7 54 + 55 47 54  - 6 18 56                     +   624.933
  9  7 55 + 57 59  4  - 9 12  1                     +   637.332
  9  7 56 + 60 12  4  -12  3 27                     +   650.542
```

9	7	57	+	62	27	38	-14	52	52	+	664.498
9	7	58	+	64	46	32	-17	39	52	+	679.135
9	7	59	+	67	9	30	-20	24	5	+	694.379
9	8	0	+	69	37	23	-23	5	5	+	710.159
9	8	1	+	72	11	2	-25	42	25	+	726.401
9	8	2	+	74	51	19	-28	15	37	+	743.028
9	8	3	+	77	39	10	-30	44	10	+	759.963
9	8	4	+	80	35	31	-33	7	28	+	777.129
9	8	5	+	83	41	19	-35	24	56	+	794.448
9	8	6	+	86	57	31	-37	35	52	+	811.843
9	8	7	+	90	24	58	-39	39	31	+	829.241
9	8	8	+	94	4	27	-41	35	4	+	846.565
9	8	9	+	97	56	31	-43	21	42	+	863.745
9	8	10	+102		1	30	-44	58	27	+	880.709
9	8	11	+106		19	20	-46	24	26	+	897.390
9	8	12	+110		49	32	-47	38	42	+	913.723
9	8	13	+115		31	0	-48	40	22	+	929.645
9	8	14	+120		22	5	-49	28	40	+	945.099
9	8	15	+125		20	33	-50	2	58	+	960.026
9	8	16	+130		23	41	-50	22	50	+	974.375
9	8	17	+135		28	24	-50	28	5	+	988.095
9	8	18	+140		31	30	-50	18	46	+	1001.143
9	8	19	+145		29	54	-49	55	13	+	1013.474
9	8	20	+150		20	49	-49	17	58	+	1025.051
9	8	21	+155		1	57	-48	27	48	+	1035.838
9	8	22	+159		31	37	-47	25	34	+	1045.804
9	8	23	+163		48	39	-46	12	15	+	1054.919
9	8	24	+167		52	30	-44	48	51	+	1063.160 TWILIGHT
9	8	25	+171		43	3	-43	16	21	+	1070.506 TWILIGHT
9	8	26	+175		20	34	-41	35	41	+	1076.938 TWILIGHT
9	8	27	+178		45	35	-39	47	47	+	1082.442 TWILIGHT
9	8	28	-178		1	11	-37	53	25	+	1087.007 TWILIGHT
9	8	29	-174		58	53	-35	53	21	+	1090.625 TWILIGHT
9	8	30	-172		6	38	-33	48	15	+	1093.291 TWILIGHT
9	8	31	-169		23	30	-31	38	41	+	1095.002 TWILIGHT
9	8	32	-166		48	36	-29	25	12	+	1095.760
9	8	33	-164		21	3	-27	8	14	+	1095.570
9	8	34	-162		0	1	-24	48	13	+	1094.436
9	8	35	-159		44	43	-22	25	29	+	1092.369
9	8	36	-157		34	24	-20	0	23	+	1089.381
9	8	37	-155		28	21	-17	33	12	+	1085.486
9	8	38	-153		25	55	-15	4	12	+	1080.701

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  9   8 39 -151 26 28   -12 33 35                                  + 1075.045
  9   8 40 -149 29 24   -10  1 37                                  + 1068.540
  9   8 41 -147 34  8   - 7 28 29                                  + 1061.209
  9   8 42 -145 40  6   - 4 54 23                                  + 1053.078
  9   8 43 -143 46 47   - 2 19 30                                  + 1044.176
   9   8 43 53  LONG.   -142  5 12  PASS NO.   380 + 1035.521
  9   8 44 -141 53 35   + 0 15 58                                  + 1034.531
  9   8 45 -140  0  0   + 2 51 51                                  + 1024.176
  9   8 46 -138  5 28   + 5 27 55                                  + 1013.143
  9   8 47 -136  9 23   + 8  4  0                                  + 1001.469
  9   8 48 -134 11 12   +10 39 52                                  +  989.190
  9   8 49 -132 10 16   +13 15 18                                  +  976.345
  9   8 50 -130  5 56   +15 50  1                                  +  962.974
  9   8 51 -127 57 30   +18 23 46                                  +  949.119
  9   8 52 -125 44 12   +20 56 12                                  +  934.822
  9   8 53 -123 25 15   +23 26 59                                  +  920.129
STNFDU  98  9  8 53 31.475  S65.2615   1756.186    NE
  9   8 54 -120 59 44   +25 55 43                                  +  905.085
  9   8 55 -118 26 43   +28 21 56                                  +  889.739
NELCAL 121  9  8 55 33.052  S22.7999    945.774    NE
GOLDST 103  9  8 55 35.751  S39.9109   1101.409    NE
  9   8 56 -115 45 10   +30 45  7                                  +  874.137
NELCAL 121  9  8 56 46.880  E23.2280    927.755    NE         **
  9   8 57 -112 54  0   +33  4 40                                  +  858.331
WHITES 111  9  8 57 16.296  W34.0538   1004.358    NE         **
FTSILL 110  9  8 57 41.613  W60.2305   1476.053    NE         **
ARKANS 109  9  8 57 51.253  W74.1688   2070.572    NE         **
2RSTON  99  9  8 57 42.169  W80.2719   2484.760    NE         **
  9   8 58 -109 52  4   +35 19 53                                  +  842.372
WHITES 111  9  8 58 58.016  N29.8036    935.510    NE
GOLDST 103  9  8 58  1.409  E41.9900   1082.499    NE         **
STNFDU  98  9  8 58 57.789  E66.5037   1664.094    NE         **
  9   8 59 -106 38 11   +37 29 59                                  +  826.312
BOLDER  95  9  8 59 24.610  S15.3235    844.564    NE
BELVOR 113  9  8 59 34.250  W83.0921   2651.661    NE         **
ABDEEN 112  9  8 59 57.033  W82.6287   2599.462    NE         **
  9   9  0 -103 11 10   +39 34  6                                  +  810.203
FTMONM 104  9  9  0 20.537  W83.0616   2622.856    NE         **
UILNOS  97  9  9  0 15.882  W63.0074   1499.366    NE         **
PNSTAT  96  9  9  0 37.223  W77.6547   2201.261    NE         **
BOLDER  95  9  9  0 16.603  E20.1440    850.077    NE         **
  9   9  1 - 99 29 54   +41 31 12                                  +  794.101
```

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FTSILL 110  9  9  1 16.835  N51.4826   1172.909    NE
LINCON 105  9  9  1 35.333  W80.2138   2352.131    NE        **
UWISCN 102  9  9  1 50.989  W38.1027    960.161    NE        **
  9  9  2 - 95 33 25  +43 20 11                     +  778.061
  9  9  3 - 91 20 58  +44 59 49                     +  762.139
ARKANS 109  9  9  3  7.866  N62.7396   1414.930    NE
UWISCN 102  9  9  3 22.697  N22.4236    810.337    NE
UILNOS  97  9  9  3 42.040  N45.9162   1024.408    NE
  9  9  4 - 86 52 14  +46 28 46                     +  746.393
2RSTON  99  9  9  4  2.475  N67.8354   1575.417    NE
  9  9  5 - 82  7 28  +47 45 41                     +  730.880
BELVOR 113  9  9  5 59.767  N63.9933   1381.883    NE
CPCAN1 107  9  9  5 18.424  N82.8045   2427.624    NE
PNSTAT  96  9  9  5 51.074  N56.1159   1167.507    NE
  9  9  6 - 77  7 36  +48 49 12                     +  715.658
PDRSPG 117  9  9  6 18.575  N73.3560   1765.636    NE
ABDEEN 112  9  9  6 12.127  N62.2699   1322.113    NE
FTMONM 104  9  9  6 35.775  N60.9676   1274.296    NE
  9  9  7 - 71 54 26  +49 37 59                     +  700.786
LINCON 105  9  9  7  4.470  N53.3393   1082.207    NE
  9  9  8 - 66 30 36  +50 10 55                     +  686.323  TWILIGHT
  9  9  9 - 60 59 32  +50 27  8                     +  672.328  TWILIGHT
  9  9 10 - 55 25 16  +50 26  2                     +  658.860  TWILIGHT
  9  9 11 - 49 52  6  +50  7 29                     +  645.977  TWILIGHT
  9  9 12 - 44 24 13  +49 31 40                     +  633.736  TWILIGHT
  9  9 13 - 39  5 19  +48 39 12                     +  622.194
  9  9 14 - 33 58 24  +47 30 59                     +  611.407
  9  9 15 - 29  5 35  +46  8  7                     +  601.427
  9  9 16 - 24 28  8  +44 31 52                     +  592.305
  9  9 17 - 20  6 35  +42 43 33                     +  584.092
  9  9 18 - 16  0 46  +40 44 27                     +  576.830
  9  9 19 - 12 10  6  +38 35 49                     +  570.565
  9  9 20 -  8 33 41  +36 18 51                     +  565.333
  9  9 21 -  5 10 25  +33 54 37                     +  561.169
  9  9 22 -  1 59  6  +31 24  5                     +  558.102
  9  9 23 +  1  1 28  +28 48  9                     +  556.158
  9  9 24 +  3 52 31  +26  7 38                     +  555.354
  9  9 25 +  6 35 12  +23 23 13                     +  555.704
  9  9 26 +  9 10 35  +20 35 36                     +  557.216
  9  9 27 + 11 39 45  +17 45 20                     +  559.890
  9  9 28 + 14  3 38  +14 52 59                     +  563.721
  9  9 29 + 16 23  9  +11 59  2                     +  568.698
```

9	9	30	+	18	39	8	+	9	3	57	+ 574.801
9	9	31	+	20	52	25	+	6	8	9	+ 582.007
9	9	32	+	23	3	46	+	3	12	4	+ 590.283
9	9	33	+	25	13	56	+	0	16	5	+ 599.593
9	9	34	+	27	23	36	-	2	39	26	+ 609.894
9	9	35	+	29	33	30	-	5	34	7	+ 621.137
9	9	36	+	31	44	21	-	8	27	37	+ 633.269
9	9	37	+	33	56	51	-11	19	33		+ 646.230
9	9	38	+	36	11	44	-14	9	33		+ 659.958
9	9	39	+	38	29	43	-16	57	15		+ 674.388
9	9	40	+	40	51	37	-19	42	16		+ 689.448
9	9	41	+	43	18	13	-22	24	11		+ 705.068
9	9	42	+	45	50	21	-25	2	33		+ 721.172
9	9	43	+	48	28	54	-27	36	54		+ 737.686
9	9	44	+	51	14	47	-30	6	43		+ 754.531
9	9	45	+	54	8	56	-32	31	28		+ 771.632
9	9	46	+	57	12	18	-34	50	32		+ 788.910
9	9	47	+	60	25	50	-37	3	14		+ 806.288
9	9	48	+	63	50	25	-39	8	50		+ 823.692
9	9	49	+	67	26	51	-41	6	34		+ 841.045
9	9	50	+	71	15	46	-42	55	35		+ 858.276
9	9	51	+	75	17	33	-44	34	57		+ 875.314
9	9	52	+	79	32	15	-46	3	46		+ 892.089
9	9	53	+	83	59	29	-47	21	6		+ 908.537
9	9	54	+	88	38	19	-48	26	3		+ 924.594
9	9	55	+	93	27	15	-49	17	48		+ 940.199
9	9	56	+	98	24	12	-49	55	41		+ 955.296
9	9	57	+103	26	31		-50	19	13		+ 969.831
9	9	58	+108	31	14		-50	28	9		+ 983.754
9	9	59	+113	35	7		-50	22	27		+ 997.017
9	10	0	+118	35	3		-50	2	25		+ 1009.578
9	10	1	+123	28	9		-49	28	32		+ 1021.397
9	10	2	+128	11	59		-48	41	31		+ 1032.436
9	10	3	+132	44	42		-47	42	12		+ 1042.665
9	10	4	+137	5	1		-46	31	32		+ 1052.052
9	10	5	+141	12	14		-45	10	33		+ 1060.573 TWILIGHT
9	10	6	+145	6	7		-43	40	12		+ 1068.206 TWILIGHT
9	10	7	+148	46	53		-42	1	29		+ 1074.930 TWILIGHT
9	10	8	+152	14	58		-40	15	17		+ 1080.732 TWILIGHT
9	10	9	+155	31	5		-38	22	27		+ 1085.598 TWILIGHT
9	10	10	+158	36	3		-36	23	44		+ 1089.520 TWILIGHT
9	10	11	+161	30	44		-34	19	49		+ 1092.492 TWILIGHT

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  9 10 12 +164 16  3  -32 11 18                          + 1094.510  TWILIGHT
  9 10 13 +166 52 55  -29 58 44                          + 1095.575
  9 10 14 +169 22 14  -27 42 36                          + 1095.690
  9 10 15 +171 44 48  -25 23 18                          + 1094.861
  9 10 16 +174  1 27  -23  1 13                          + 1093.095
  9 10 17 +176 12 56  -20 36 42                          + 1090.405
  9 10 18 +178 19 58  -18 10  1                          + 1086.803
  9 10 19 -179 36 46  -15 41 26                          + 1082.306
SAMOAI 114  9 10 19 32.522  W44.0642   1411.966     NE          **
  9 10 20 -177 36 39  -13 11 14                          + 1076.933
  9 10 21 -175 39  3  -10 39 36                          + 1070.702
  9 10 22 -173 43 25  - 8  6 45                          + 1063.639
  9 10 23 -171 49  8  - 5 32 54                          + 1055.768
SAMOAI 114  9 10 23 34.894  N54.7464   1615.011     NE
  9 10 24 -169 55 43  - 2 58 13                          + 1047.116
  9 10 25 -168  2 34  - 0 22 54                          + 1037.712
   9 10 25  8  LONG.  -167 45 52  PASS NO.  381 + 1036.221
  9 10 26 -166  9  9  + 2 12 51                          + 1027.587
  9 10 27 -164 14 56  + 4 48 52                          + 1016.774
  9 10 28 -162 19 19  + 7 24 56                          + 1005.308
  9 10 29 -160 21 45  +10  0 50                          +  993.224
BSANDS 100  9 10 29 17.173  S59.4000   1665.978     NE
  9 10 30 -158 21 36  +12 36 21                          +  980.562
  9 10 31 -156 18 13  +15 11 14                          +  967.360
  9 10 32 -154 10 56  +17 45 13                          +  953.659
  9 10 33 -151 58 59  +20 17 58                          +  939.503
BSANDS 100  9 10 33 41.010  E52.5140   1389.988     NE          **
  9 10 34 -149 41 34  +22 49 10                          +  924.936
  9 10 35 -147 17 50  +25 18 25                          +  910.003
  9 10 36 -144 46 51  +27 45 16                          +  894.750
  9 10 37 -142  7 37  +30  9 14                          +  879.226
  9 10 38 -139 19  3  +32 29 42                          +  863.481
WHITES 111  9 10 38 31.544  W87.4891   3145.102     NE          **
  9 10 39 -136 20  1  +34 46  3                          +  847.565
GOLDST 103  9 10 39 16.574  W72.6615   1981.024     NE          **
  9 10 40 -133  9 21  +36 57 29                          +  831.531
STNFDU  98  9 10 40 13.016  W53.6149   1272.383     NE          **
  9 10 41 -129 45 51  +39  3 10                          +  815.430
BOLDER  95  9 10 41 31.953  W77.2864   2187.452     NE          **
  9 10 42 -126  8 23  +41  2  7                          +  799.318
  9 10 43 -122 15 55  +42 53 15                          +  783.249
STNFDU  98  9 10 43  1.478  N42.3471   1014.674     NE
```

```
UWISCN 102  9 10 43  6.257  W86.1032    2849.206    NE          **
  9 10 44 -118  7 40  +44 35 21                      +  767.280
GOLDST 103  9 10 44 17.613  N61.0567    1365.191    NE
  9 10 45 -113 43 11  +46  7  8                      +  751.467
  9 10 46 -109  2 32  +47 27 15                      +  735.867
WHITES 111  9 10 46 28.233  N73.7798    1822.768    NE
BOLDER  95  9 10 46 46.340  N57.2555    1201.525    NE
  9 10 47 -104  6 30  +48 34 17                      +  720.540
  9 10 48 - 98 56 37  +49 26 57                      +  705.544
FTSILL 110  9 10 48  5.936  N75.5200    1871.127    NE
  9 10 49 - 93 35 18  +50  4  2                      +  690.937  TWILIGHT
ARKANS 109  9 10 49 30.867  N76.7836    1904.186    NE
UWISCN 102  9 10 49 42.671  N54.9383    1086.444    NE
UILNOS  97  9 10 49 58.429  N65.8570    1378.198    NE
  9 10 50 - 88  5 48  +50 24 36                      +  676.780  TWILIGHT
2RSTON  99  9 10 50 15.280  N77.9341    1954.643    NE
  9 10 51 - 82 32  3  +50 27 59                      +  663.130  TWILIGHT
BELVOR 113  9 10 51 58.153  N70.0536    1491.670    SE
CPCAN1 107  9 10 51 20.621  N86.9974    2653.295    SE
PNSTAT  96  9 10 51 50.140  N64.3055    1282.359    SE
  9 10 52 - 76 58 17  +50 13 55                      +  650.046  TWILIGHT
PDRSPG 117  9 10 52 15.559  N77.0847    1844.459    SE
ABDEEN 112  9 10 52  9.524  N67.9478    1402.371    SE
LINCON 105  9 10 52 59.663  N55.9327    1042.859    SE
FTMONM 104  9 10 52 31.895  N65.3547    1301.615    SE
  9 10 53 - 71 28 44  +49 42 31                      +  637.586  TWILIGHT
  9 10 54 - 66  7 16  +48 54 16                      +  625.808
  9 10 55 - 60 57  5  +47 50  2                      +  614.767
  9 10 56 - 56  0 32  +46 30 50                      +  604.516
  9 10 57 - 51 19  6  +44 57 56                      +  595.109
  9 10 58 - 46 53 28  +43 12 37                      +  586.594
LINCON 105  9 10 58 18.870  E84.8804    2281.067    SE          **
  9 10 59 - 42 43 39  +41 16 12                      +  579.019
  9 11  0 - 38 49 10  +39  9 56                      +  572.426
  9 11  1 - 35  9 11  +36 55  2                      +  566.856
  9 11  2 - 31 42 39  +34 32 35                      +  562.344
  9 11  3 - 28 28 22  +32  3 36                      +  558.921
  9 11  4 - 25 25  8  +29 28 59                      +  556.614
  9 11  5 - 22 31 44  +26 49 35                      +  555.443
  9 11  6 - 19 47  0  +24  6  7                      +  555.423
  9 11  7 - 17  9 49  +21 19 15                      +  556.564
  9 11  8 - 14 39  8  +18 29 37                      +  558.868
```

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  9 11  9 - 12 13 58  +15 37 44                          +  562.333
  9 11 10 -  9 53 23  +12 44  8                          +  566.947
  9 11 11 -  7 36 33  + 9 49 17                          +  572.696
  9 11 12 -  5 22 37  + 6 53 37                          +  579.556
  9 11 13 -  3 10 48  + 3 57 33                          +  587.497
  9 11 14 -  1  0 24  + 1  1 28                          +  596.486
SANANA 116  9 11 14 27.741  S 3.8281     602.220     SE
SANANA 116  9 11 14 20.820  W 2.9622     600.585     SE         **
  9 11 15 +  1  9 22  - 1 54 14                          +  606.479
  9 11 16 +  3 19 10  - 4 49 13                          +  617.430
  9 11 17 +  5 29 44  - 7 43  5                          +  629.288
  9 11 18 +  7 41 47  -10 35 29                          +  641.994
  9 11 19 +  9 56  0  -13 26  4                          +  655.488
  9 11 20 + 12 13 10  -16 14 27                          +  669.704
  9 11 21 + 14 34  2  -19  0 14                          +  684.574
  9 11 22 + 16 59 23  -21 43  1                          +  700.025
  9 11 23 + 19 30  4  -24 22 23                          +  715.985
JOBURG 118  9 11 23 38.012  W49.2280    1042.387     SE         **
  9 11 24 + 22  6 57  -26 57 51                          +  732.377
  9 11 25 + 24 50 55  -29 28 56                          +  749.126
  9 11 26 + 27 42 56  -31 55  5                          +  766.153
JOBURG 118  9 11 26 10.509  S47.1095    1064.741     SE
  9 11 27 + 30 43 55  -34 15 41                          +  783.382
  9 11 28 + 33 54 50  -36 30  7                          +  800.736
  9 11 29 + 37 16 36  -38 37 38                          +  818.139
  9 11 30 + 40 50  1  -40 37 30                          +  835.514
  9 11 31 + 44 35 48  -42 28 50                          +  852.790
  9 11 32 + 48 34 23  -44 10 46                          +  869.894
  9 11 33 + 52 45 56  -45 42 22                          +  886.758
  9 11 34 + 57 10  8  -47  2 43                          +  903.314
  9 11 35 + 61 46 15  -48 10 53                          +  919.498
  9 11 36 + 66 32 54  -49  6  3                          +  935.250
  9 11 37 + 71 28  9  -49 47 30                          +  950.511
  9 11 38 + 76 29 29  -50 14 41                          +  965.227
  9 11 39 + 81 33 58  -50 27 17                          +  979.347
  9 11 40 + 86 38 27  -50 25 15                          +  992.822
  9 11 41 + 91 39 44  -50  8 46                          + 1005.608
  9 11 42 + 96 34 52  -49 38 17                          + 1017.664
  9 11 43 +101 21 17  -48 54 28                          + 1028.953
  9 11 44 +105 56 59  -47 58  7                          + 1039.441
  9 11 45 +110 20 32  -46 50 12                          + 1049.098
  9 11 46 +114 31  6  -45 31 40                          + 1057.896
```

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  9 11 47 +118 28 21   -44  3 33                          + 1065.814  TWILIGHT
  9 11 48 +122 12 23   -42 26 49                          + 1072.829  TWILIGHT
  9 11 49 +125 43 37   -40 42 24                          + 1078.926  TWILIGHT
  9 11 50 +129  2 40   -38 51  7                          + 1084.092  TWILIGHT
  9 11 51 +132 10 20   -36 53 47                          + 1088.318  TWILIGHT
  9 11 52 +135  7 31   -34 51  6                          + 1091.595  TWILIGHT
OOMERA 119  9 11 52 34.971  S16.7057   1133.620     NE
  9 11 53 +137 55  5   -32 43 40                          + 1093.920  TWILIGHT
OOMERA 119  9 11 53 44.473  E17.7556   1141.126     NE         **
  9 11 54 +140 33 59   -30 32  4                          + 1095.292
  9 11 55 +143  5  5   -28 16 46                          + 1095.712
  9 11 56 +145 29 15   -25 58 13                          + 1095.188
  9 11 57 +147 47 18   -23 36 48                          + 1093.724
  9 11 58 +150  0  0   -21 12 51                          + 1091.333
  9 11 59 +152  8  4   -18 46 41                          + 1088.026
  9 12  0 +154 12 12   -16 18 35                          + 1083.819
  9 12  1 +156 13  2   -13 48 46                          + 1078.729
  9 12  2 +158 11 11   -11 17 29                          + 1072.776
  9 12  3 +160  7 15   - 8 44 57                          + 1065.983
  9 12  4 +162  1 47   - 6 11 21                          + 1058.374
  9 12  5 +163 55 21   - 3 36 53                          + 1049.976
  9 12  6 +165 48 30   - 1  1 44                          + 1040.815
   9 12  6 23  LONG.   +166 33 27  PASS NO.   382 + 1036.888
  9 12  7 +167 41 46   + 1 33 54                          + 1030.924
  9 12  8 +169 35 42   + 4  9 50                          + 1020.334
  9 12  9 +171 30 53   + 6 45 52                          + 1009.079
  9 12 10 +173 27 53   + 9 21 48                          +  997.195
  9 12 11 +175 27 18   +11 57 24                          +  984.719
  9 12 12 +177 29 45   +14 32 26                          +  971.691
  9 12 13 +179 35 58   +17  6 37                          +  958.151
  9 12 14 -178 13 22   +19 39 40                          +  944.140
BSANDS 100  9 12 14 56.092  W70.4452   2024.127     NE         **
  9 12 15 -175 57 27   +22 11 15                          +  929.703
  9 12 16 -173 35 27   +24 40 59                          +  914.885
  9 12 17 -171  6 26   +27  8 27                          +  899.732
  9 12 18 -168 29 26   +29 33  8                          +  884.291
  9 12 19 -165 43 24   +31 54 31                          +  868.613
  9 12 20 -162 47 10   +34 11 56                          +  852.746
BSANDS 100  9 12 20 57.447  N70.8484   1876.013     NE
  9 12 21 -159 39 39   +36 24 39                          +  836.743
  9 12 22 -156 19 35   +38 31 50                          +  820.657
  9 12 23 -152 45 50   +40 32 34                          +  804.540
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  9 12 24 -148 57 21   +42 25 45                          +  788.449
  9 12 25 -144 53 15   +44 10 15                          +  772.438
  9 12 26 -140 33  1   +45 44 46                          +  756.564
  9 12 27 -135 56 33   +47  7 57                          +  740.886
  9 12 28 -131  4 25   +48 18 27                          +  725.460
  9 12 29 -125 57 59   +49 14 54                          +  710.345
STNFDU  98  9 12 29 43.101  N70.4133   1600.848    NE
  9 12 30 -120 39 24   +49 56  4                         +  695.601  TWILIGHT
GOLDST 103  9 12 30 41.789  N76.0436   1861.712    NE
  9 12 31 -115 11 45   +50 20 56                          +  681.287  TWILIGHT
  9 12 32 -109 38 47   +50 28 46                          +  667.461  TWILIGHT
WHITES 111  9 12 32 31.151  N79.7951   2052.521    SE
BOLDER  95  9 12 32 47.301  N66.4694   1361.232    SE
  9 12 33 -104  4 41   +50 19 12                          +  654.183  TWILIGHT
  9 12 34 - 98 33 44   +49 52 14                          +  641.511  TWILIGHT
FTSILL 110  9 12 34  1.520  N77.8049   1877.201    SE
  9 12 35 - 93  9 55   +49  8 16                         +  629.502  TWILIGHT
ARKANS 109  9 12 35 27.152  N75.5559   1707.226    SE
UWISCN 102  9 12 35 39.676  N48.1357    884.733    SE
UILNOS  97  9 12 35 56.506  N60.7679   1124.783    SE
  9 12 36 - 87 56 38   +48  8  4                         +  618.212
2RSTON  99  9 12 36 14.839  N74.7675   1645.773    SE
  9 12 37 - 82 56 27   +46 52 38                          +  607.696
CPCAN1 107  9 12 37 28.976  N82.9764   2160.751    SE
  9 12 38 - 78 11  4   +45 23 10                          +  598.007
BPOINT 126  9 12 38 14.130  N55.2912    966.500    SE
PORSPG 117  9 12 38 34.997  N65.4852   1215.303    SE
BELVOR 113  9 12 38 13.574  N54.0504    943.473    SE
ABDEEN 112  9 12 38 27.540  N47.7537    841.696    SE
FTMONM 104  9 12 38 55.185  N36.7613    719.619    SE
PNSTAT  96  9 12 38  3.913  N43.2572    790.775    SE
  9 12 39 - 73 41 22   +43 40 57                          +  589.196
LINCON 105  9 12 39 30.471  N 1.3279    585.207    SE
LINCON 105  9 12 39 34.365  E 2.2970    584.985    SE        **
UWISCN 102  9 12 39 19.533  E74.8019   1586.761    SE        **
  9 12 40 - 69 27 32   +41 47 17                          +  581.310
FTMONM 104  9 12 40 44.691  E52.2624    883.751    SE        **
UILNOS  97  9 12 40 49.058  E82.1466   2032.852    SE        **
PNSTAT  96  9 12 40 29.159  E61.6950   1080.241    SE        **
  9 12 41 - 65 29 12   +39 43 27                          +  574.394
BELVOR 113  9 12 41 28.032  E70.1603   1343.121    SE        **
ABDEEN 112  9 12 41  6.794  E64.2161   1142.962    SE        **
```

```
  9 12 42 - 61 45 35  +37 30 41                              +  568.489
PDRSPG 117  9 12 42 57.783  E77.9529   1715.889     SE          **
  9 12 43 - 58 15 41  +35 10  6                              +  563.632
  9 12 44 - 54 58 22  +32 42 44                              +  559.856
  9 12 45 - 51 52 23  +30  9 30                              +  557.187
  9 12 46 - 48 56 34  +27 31 16                              +  555.651
  9 12 47 - 46  9 42  +24 48 47                              +  555.261
  9 12 48 - 43 30 40  +22  2 44                              +  556.031
  9 12 49 - 40 58 23  +19 13 45                              +  557.965
  9 12 50 - 38 31 52  +16 22 23                              +  561.061
  9 12 51 - 36 10 10  +13 29 11                              +  565.311
  9 12 52 - 33 52 26  +10 34 35                              +  570.703
  9 12 53 - 31 37 48  + 7 39  4                              +  577.214
  9 12 54 - 29 25 30  + 4 43  2                              +  584.816
  9 12 55 - 27 14 46  + 1 46 54                              +  593.479
  9 12 56 - 25  4 53  - 1  8 59                              +  603.160
  9 12 57 - 22 55  9  - 4  4 13                              +  613.814
  9 12 58 - 20 44 48  - 6 58 26                              +  625.392
  9 12 59 - 18 33 11  - 9 51 18                              +  637.838
  9 13  0 - 16 19 33  -12 42 25                              +  651.090
  9 13  1 - 14  3 10  -15 31 26                              +  665.086
  9 13  2 - 11 43 18  -18 17 58                              +  679.757
  9 13  3 -  9 19  7  -21  1 37                              +  695.033
  9 13  4 -  6 49 50  -23 41 56                              +  710.841
  9 13  5 -  4 14 35  -26 18 30                              +  727.104
  9 13  6 -  1 32 28  -28 50 48                              +  743.749
  9 13  7 +  1 17 28  -31 18 18                              +  760.696
  9 13  8 +  4 16  8  -33 40 26                              +  777.869
  9 13  9 +  7 24 30  -35 56 32                              +  795.191
  9 13 10 + 10 43 29  -38  5 56                              +  812.584
  9 13 11 + 14 13 57  -40  7 51                              +  829.975
  9 13 12 + 17 56 37  -42  1 28                              +  847.288
  9 13 13 + 21 52  1  -43 45 54                              +  864.452
  9 13 14 + 26  0 22  -45 20 14                              +  881.397
  9 13 15 + 30 21 30  -46 43 32                              +  898.054
  9 13 16 + 34 54 48  -47 54 53                              +  914.361
  9 13 17 + 39 39  3  -48 53 25                              +  930.254
  9 13 18 + 44 32 27  -49 38 23                              +  945.673
  9 13 19 + 49 32 36  -50  9 13                              +  960.565
  9 13 20 + 54 36 40  -50 25 30                              +  974.877
  9 13 21 + 59 41 32  -50 27  8                              +  988.559
  9 13 22 + 64 44  0  -50 14 14                              + 1001.566
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9 13 23	+ 69 41 0	-49 47 12			+ 1013.856	
9 13 24	+ 74 29 52	-49 6 38			+ 1025.391	
9 13 25	+ 79 8 28	-48 13 20			+ 1036.135	
9 13 26	+ 83 35 13	-47 8 11			+ 1046.057	
9 13 27	+ 87 49 8	-45 52 12			+ 1055.131	
9 13 28	+ 91 49 46	-44 26 23			+ 1063.330	TWILIGHT
9 13 29	+ 95 37 5	-42 51 41			+ 1070.634	TWILIGHT
9 13 30	+ 99 11 29	-41 9 5			+ 1077.026	TWILIGHT
9 13 31	+102 33 31	-39 19 26			+ 1082.491	TWILIGHT
9 13 32	+105 43 58	-37 23 31			+ 1087.018	TWILIGHT
9 13 33	+108 43 41	-35 22 5			+ 1090.599	TWILIGHT
9 13 34	+111 33 34	-33 15 47			+ 1093.230	TWILIGHT
9 13 35	+114 14 33	-31 5 9			+ 1094.909	TWILIGHT
9 13 36	+116 47 31	-28 50 44			+ 1095.636	
9 13 37	+119 13 20	-26 32 57			+ 1095.416	
9 13 38	+121 32 50	-24 12 13			+ 1094.256	
9 13 39	+123 46 47	-21 48 52			+ 1092.164	
9 13 40	+125 55 56	-19 23 15			+ 1089.153	
9 13 41	+128 0 59	-16 55 36			+ 1085.237	
9 13 42	+130 2 33	-14 26 12			+ 1080.433	
9 13 43	+132 1 18	-11 55 17			+ 1074.760	
9 13 44	+133 57 49	- 9 23 3			+ 1068.240	
9 13 45	+135 52 39	- 6 49 43			+ 1060.895	
9 13 46	+137 46 24	- 4 15 29			+ 1052.753	
9 13 47	+139 39 35	- 1 40 31			+ 1043.840	
9 13 47 38	LONG.	+140 52 45	PASS NO.	383	+ 1037.597	
9 13 48	+141 32 45	+ 0 54 59			+ 1034.186	
9 13 49	+143 26 26	+ 3 30 50			+ 1023.822	
9 13 50	+145 21 13	+ 6 6 50			+ 1012.782	
9 13 51	+147 17 41	+ 8 42 46			+ 1001.102	
9 13 52	+149 16 23	+11 18 26			+ 988.817	
9 13 53	+151 17 59	+13 53 36			+ 975.967	
9 13 54	+153 23 9	+16 27 59			+ 962.591	
9 13 55	+155 32 36	+19 1 18			+ 948.731	
9 13 56	+157 47 4	+21 33 15			+ 934.429	
9 13 57	+160 7 25	+24 3 26			+ 919.731	
9 13 58	+162 34 31	+26 31 28			+ 904.683	
9 13 59	+165 9 21	+28 56 52			+ 889.331	
9 14 0	+167 52 57	+31 19 6			+ 873.725	
9 14 1	+170 46 25	+33 37 32			+ 857.913	
9 14 2	+173 50 55	+35 51 29			+ 841.948	
9 14 3	+177 7 37	+38 0 7			+ 825.881	

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  9 14  4 -179 22 17  +40  2 32                                  +  809.767
  9 14  5 -175 37 43  +41 57 43                                  +  793.659
  9 14  6 -171 37 45  +43 44 31                                  +  777.612
  9 14  7 -167 21 44  +45 21 40                                  +  761.684
  9 14  8 -162 49 28  +46 47 51                                  +  745.932
BSANDS 100  9 14  8 38.067  N89.2187   3059.904    NE
  9 14  9 -158  1 20  +48  1 42                                  +  730.414
  9 14 10 -152 58 28  +49  1 51                                  +  715.188
  9 14 11 -147 42 51  +49 47  2                                  +  700.313
  9 14 12 -142 17 17  +50 16  9                                  +  685.848  TWILIGHT
  9 14 13 -136 45 23  +50 28 25                                  +  671.853  TWILIGHT
  9 14 14 -131 11 14  +50 23 20                                  +  658.386  TWILIGHT
  9 14 15 -125 39 10  +50  0 49                                  +  645.506  TWILIGHT
STNFDU  98  9 14 15 38.253  N72.0137   1553.630    SE
  9 14 16 -120 13 15  +49 21 11                                  +  633.272  TWILIGHT
GOLDST 103  9 14 16 37.949  N74.9597   1675.767    SE
  9 14 17 -114 57  2  +48 25  5                                  +  621.739
  9 14 18 -109 53 20  +47 13 29                                  +  610.964
WHITES 111  9 14 18 38.641  N73.9835   1581.823    SE
BOLDER  95  9 14 18 57.613  N50.7978    894.111    SE
  9 14 19 -105  4  4  +45 47 32                                  +  600.999
  9 14 20 -100 30 19  +44  8 30                                  +  591.896
FTSILL 110  9 14 20 28.683  N63.8993   1158.210    SE
LINCON 105  9 14 20 49.818  W84.3813   2239.501    SE       **
UWISCN 102  9 14 20 35.048  W53.3180    916.928    SE       **
  9 14 21 -  96 12 27  +42 17 41                                 +  583.704
PNSTAT  96  9 14 21 44.592  W72.6771   1464.611    SE       **
  9 14 22 -  92 10 11  +40 16 22                                 +  576.468
ARKANS 109  9 14 22 21.629  N44.3574    773.404    SE
UWISCN 102  9 14 22 38.933  S42.6829    752.457    SE
BELVOR 113  9 14 22 43.526  W67.6683   1250.269    SE       **
ABDEEN 112  9 14 22 22.288  W72.1688   1433.501    SE       **
FTMONM 104  9 14 22  0.247  W77.2845   1704.174    SE       **
UILNOS  97  9 14 22  4.573  W30.8409    660.925    SE       **
BOLDER  95  9 14 22  3.976  E69.3183   1315.685    SE       **
  9 14 23 -  88 22 52  +38  5 49                               +  570.232
2RSTON  99  9 14 23 28.351  N26.5783    628.330    SE
UILNOS  97  9 14 23  2.416  S24.3714    620.308    SE
  9 14 24 -  84 49 33  +35 47 10                                 +  565.033
PDRSPG 117  9 14 24 13.278  W58.7489    987.899    SE       **
WHITES 111  9 14 24 51.345  E87.2188   2443.478    SE       **
FTSILL 110  9 14 24 28.089  E75.1013   1552.254    SE       **
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ARKANS 109  9 14 24 19.169  E52.8245    874.710    SE        **
2RSTON  99  9 14 24 27.574  E31.4272    650.088    SE        **
  9 14 25 - 81 29  6  +33 21 28                     +   560.904
CPCAN1 107  9 14 25 16.436  N44.7140    758.912    SE
  9 14 26 - 78 20 19  +30 49 40                     +   557.878
PORSPG 117  9 14 26 56.713  S58.6757    973.060    SE
BELVOR 113  9 14 26 23.816  S66.1642   1171.539    SE
ABDEEN 112  9 14 26 45.281  S71.0513   1348.084    SE
PNSTAT  96  9 14 26  9.087  S70.3828   1322.561    SE
CPCAN1 107  9 14 26 59.453  E46.1102    769.922    SE        **
  9 14 27 - 75 22  0  +28 12 39                     +   555.976
FTMONM 104  9 14 27 27.983  S76.9081   1633.253    SE
  9 14 28 - 72 32 55  +25 31 12                     +   555.218
LINCON 105  9 14 28 23.025  S84.3979   2163.953    SE
  9 14 29 - 69 51 57  +22 46  1                     +   555.616
  9 14 30 - 67 18  1  +19 57 44                     +   557.179
PANTIG 120  9 14 30 59.271  W32.9512    656.245    SE        **
  9 14 31 - 64 50  5  +17  6 55                     +   559.905
  9 14 32 - 62 27 13  +14 14  8                     +   563.791
PANTIG 120  9 14 32 17.157  S39.3305    711.532    SE
  9 14 33 - 60  8 31  +11 19 50                     +   568.822
  9 14 34 - 57 53  9   + 8 24 29                    +   574.981
  9 14 35 - 55 40 18   + 5 28 32                    +   582.242
  9 14 36 - 53 29 13   + 2 32 21                    +   590.574
  9 14 37 - 51 19 10   - 0 23 40                    +   599.937
  9 14 38 - 49  9 25   - 3 19  7                    +   610.290
  9 14 39 - 46 59 16   - 6 13 41                    +   621.583
  9 14 40 - 44 48  1   - 9  6 58                    +   633.762
  9 14 41 - 42 34 56  -11 58 36                     +   646.767
  9 14 42 - 40 19 18  -14 48 15                     +   660.536
  9 14 43 - 38  0 21  -17 35 30                     +   675.002
  9 14 44 - 35 37 19  -20 19 58                     +   690.095
  9 14 45 - 33  9 23  -23  1 14                     +   705.743
  9 14 46 - 30 35 41  -25 38 51                     +   721.871
  9 14 47 - 27 55 21  -28 12 20                     +   738.403
  9 14 48 - 25  7 27  -30 41  9                     +   755.262
  9 14 49 - 22 11  2  -33  4 45                     +   772.371
  9 14 50 - 19  5 11  -35 22 30                     +   789.653
  9 14 51 - 15 48 54  -37 33 43                     +   807.031
  9 14 52 - 12 21 22  -39 37 39                     +   824.429
  9 14 53 -  8 41 47  -41 33 29                     +   841.772
  9 14 54 -  4 49 35  -43 20 22                     +   858.989
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9	14	55	-	0	44	25	-44	57	22	+	876.008	
9	14	56	+	3	33	37	-46	23	35	+	892.762	
9	14	57	+	8	4	2	-47	38	3	+	909.184	
9	14	58	+	12	45	45	-48	39	55	+	925.211	
9	14	59	+	17	37	7	-49	28	23	+	940.784	
9	15	0	+	22	35	55	-50	2	49	+	955.847	
9	15	1	+	27	39	23	-50	22	47	+	970.345	
9	15	2	+	32	44	26	-50	28	6	+	984.230	
9	15	3	+	37	47	52	-50	18	49	+	997.453	
9	15	4	+	42	46	35	-49	55	16	+	1009.973	
9	15	5	+	47	37	47	-49	18	1	+	1021.749	
9	15	6	+	52	19	12	-48	27	48	+	1032.746	
9	15	7	+	56	49	5	-47	25	31	+	1042.932	
9	15	8	+	61	6	18	-46	12	8	+	1052.277	
9	15	9	+	65	10	19	-44	48	39	+	1060.756	TWILIGHT
9	15	10	+	69	0	59	-43	16	4	+	1068.346	TWILIGHT
9	15	11	+	72	38	35	-41	35	20	+	1075.030	TWILIGHT
9	15	12	+	76	3	39	-39	47	21	+	1080.793	TWILIGHT
9	15	13	+	79	16	56	-37	52	55	+	1085.621	TWILIGHT
9	15	14	+	82	19	15	-35	52	47	+	1089.506	TWILIGHT
9	15	15	+	85	11	30	-33	47	37	+	1092.442	TWILIGHT
9	15	16	+	87	54	38	-31	38	1	+	1094.427	TWILIGHT
9	15	17	+	90	29	31	-29	24	29	+	1095.461	
9	15	18	+	92	57	2	-27	7	30	+	1095.547	
9	15	19	+	95	18	1	-24	47	28	+	1094.690	
9	15	20	+	97	33	17	-22	24	45	+	1092.899	
9	15	21	+	99	43	33	-19	59	40	+	1090.185	
9	15	22	+101	49	32		-17	32	30	+	1086.562	
9	15	23	+103	51	55		-15	3	32	+	1082.045	
9	15	24	+105	51	18		-12	32	59	+	1076.654	
9	15	25	+107	48	18		-10	1	5	+	1070.408	
9	15	26	+109	43	29		- 7	28	2	+	1063.331	
9	15	27	+111	37	26		- 4	54	1	+	1055.447	
9	15	28	+113	30	41		- 2	19	14	+	1046.784	
9	15	28	53	LONG.			+115	12	2	PASS NO. 384 +	1038.346	
9	15	29	+115	23	46		+ 0	16	7	+	1037.370	
9	15	30	+117	17	15		+ 2	51	52	+	1027.237	
9	15	31	+119	11	41		+ 5	27	49	+	1016.416	
9	15	32	+121	7	38		+ 8	3	45	+	1004.943	
9	15	33	+123	5	42		+10	39	28	+	992.853	
9	15	34	+125	6	29		+13	14	44	+	980.185	
9	15	35	+127	10	39		+15	49	18	+	966.978	

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  9 15 38 +133 50 44   +23 25 47                          +   924.540
  9 15 39 +136 16  0   +25 54 21                          +   909.601
TOKAWA 108  9 15 39 26.104  S49.9778    1297.807     NE
  9 15 40 +138 48 44   +28 20 25                          +   894.344
  9 15 41 +141 29 58   +30 43 28                          +   878.815
  9 15 42 +144 20 46   +33  2 53                          +   863.064
TOKAWA 108  9 15 42 47.278  E50.8726    1245.150     NE         **
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  9 15 49 +170 18 42   +46 26 58                          +   751.006
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  9 15 51 -179 58  5   +48 47 50                          +   720.069
  9 15 52 -174 45 35   +49 36 57                          +   705.069
  9 15 53 -169 22 20   +50 10 16                          +   690.460  TWILIGHT
  9 15 54 -163 51 46   +50 26 54                          +   676.302  TWILIGHT
  9 15 55 -158 17 53   +50 26 18                          +   662.653  TWILIGHT
  9 15 56 -152 44 57   +50  8 15                          +   649.572  TWILIGHT
  9 15 57 -147 17 10   +49 32 59                          +   637.118  TWILIGHT
  9 15 58 -141 58 14   +48 41  4                          +   625.348
  9 15 59 -136 51  8   +47 33 22                          +   614.318
  9 16  0 -131 58  4   +46 11  1                          +   604.082
  9 16  1 -127 20 18   +44 35 15                          +   594.692
  9 16  2 -122 58 22   +42 47 22                          +   586.198
STNFDU  98  9 16  2 11.492  N47.1954     821.644     SE
  9 16  3 -118 52  9   +40 48 40                          +   578.647
NELCAL 121  9 16  3 28.884  N59.0808    1013.251     SE
GOLDST 103  9 16  3 30.841  N43.3257     762.043     SE
UILNOS  97  9 16  3 20.067  W88.8335    2646.388     SE         **
BOLDER  95  9 16  3 19.449  W67.1853    1238.992     SE         **
  9 16  4 -115  1  5   +38 40 24                          +   572.082
STNFDU  98  9 16  4 33.030  E59.7664    1018.521     SE         **
  9 16  5 -111 24 17   +36 23 45                          +   566.544
FTSILL 110  9 16  5 43.624  W65.1142    1150.872     SE         **
ARKANS 109  9 16  5 34.705  W80.1020    1855.880     SE         **
GOLDST 103  9 16  5 25.312  E52.1223     863.223     SE         **
2RSTON  99  9 16  5 43.089  W84.4380    2190.553     SE         **
```

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WHITES 111  9 16  6 23.319  S 8.4231    566.227    SE
BOLDER  95  9 16  6 51.685  S64.0955   1110.051    SE
WHITES 111  9 16  6  6.922  W 9.1275    568.227    SE        **
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  9 16  8 -101 48  2  +28 53 45                                  +  556.418
CPCAN1 107  9 16  8 14.927  W84.2643   2157.532    SE        **
  9 16  9 - 98 56 40  +26 13 23                                  +  555.292
FTSILL 110  9 16  9 11.472  S66.3760   1174.917    SE
  9 16 10 - 96 13 43  +23 29  5                                  +  555.320
  9 16 11 - 93 38  3  +20 41 32                                  +  556.511
  9 16 12 - 91  8 39  +17 51 19                                  +  558.868
ARKANS 109  9 16 12  9.244  S83.5645   2103.145    SE
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2RSTON  99  9 16 13 53.292  S88.8911   2621.111    SE
  9 16 14 - 86 24 51  +12  5  1                                  +  567.056
  9 16 15 - 84  8 41  + 9  9 53                                  +  572.860
  9 16 16 - 81 55 14  + 6 14  1                                  +  579.775
  9 16 17 - 79 43 45  + 3 17 50                                  +  587.772
QUITOE 125  9 16 17 31.604  N26.1884    649.594    SE
  9 16 18 - 77 33 28  + 0 21 43                                  +  596.814
QUITOE 125  9 16 18 19.909  E19.6576    629.978    SE        **
  9 16 19 - 75 23 41  - 2 33 58                                  +  606.860
  9 16 20 - 73 13 40  - 5 28 49                                  +  617.862
  9 16 21 - 71  2 45  - 8 22 30                                  +  629.768
  9 16 22 - 68 50 10  -11 14 39                                  +  642.519
  9 16 23 - 66 35 13  -14  4 53                                  +  656.055
  9 16 24 - 64 17 10  -16 52 49                                  +  670.309
  9 16 25 - 61 55 13  -19 38  5                                  +  685.212
  9 16 26 - 59 28 34  -22 20 15                                  +  700.693
  9 16 27 - 56 56 23  -24 58 54                                  +  716.677
  9 16 28 - 54 17 47  -27 33 32                                  +  733.090
  9 16 29 - 51 31 51  -30  3 38                                  +  749.854
  9 16 30 - 48 37 38  -32 28 40                                  +  766.891
  9 16 31 - 45 34 13  -34 48  1                                  +  784.126
  9 16 32 - 42 20 37  -37  1  0                                  +  801.480
  9 16 33 - 38 55 57  -39  6 54                                  +  818.879
  9 16 34 - 35 19 24  -41  4 55                                  +  836.246
  9 16 35 - 31 30 22  -42 54 11                                  +  853.508
  9 16 36 - 27 28 26  -44 33 49                                  +  870.595
  9 16 37 - 23 13 32  -46  2 52                                  +  887.437
  9 16 38 - 18 46  5  -47 20 25                                  +  903.969
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9	16	39	-	14	6	59	-48	25	33	+ 920.125	
9	16	40	-	9	17	46	-49	17	29	+ 935.846	
9	16	41	-	4	20	31	-49	55	30	+ 951.073	
9	16	42	+	0	42	8	-50	19	9	+ 965.753	
9	16	43	+	5	47	11	-50	28	9	+ 979.835	
9	16	44	+	10	51	25	-50	22	30	+ 993.270	
9	16	45	+	15	51	40	-50	2	29	+ 1006.015	
9	16	46	+	20	45	4	-49	28	35	+ 1018.030	
9	16	47	+	25	29	10	-48	41	32	+ 1029.276	
9	16	48	+	30	2	7	-47	42	10	+ 1039.722	
9	16	49	+	34	22	38	-46	31	26	+ 1049.336	
9	16	50	+	38	30	0	-45	10	22	+ 1058.092	
9	16	51	+	42	24	1	-43	39	57	+ 1065.967	TWILIGHT
9	16	52	+	46	4	53	-42	1	9	+ 1072.941	TWILIGHT
9	16	53	+	49	33	2	-40	14	52	+ 1078.999	TWILIGHT
9	16	54	+	52	49	12	-38	21	58	+ 1084.127	TWILIGHT
9	16	55	+	55	54	11	-36	23	10	+ 1088.315	TWILIGHT
9	16	56	+	58	48	53	-34	19	12	+ 1091.556	TWILIGHT
9	16	57	+	61	34	12	-32	10	38	+ 1093.847	TWILIGHT
9	16	58	+	64	11	3	-29	58	2	+ 1095.187	
9	16	59	+	66	40	19	-27	41	52	+ 1095.579	
9	17	0	+	69	2	51	-25	22	33	+ 1095.026	
9	17	1	+	71	19	28	-23	0	28	+ 1093.536	
9	17	2	+	73	30	54	-20	35	57	+ 1091.121	
9	17	3	+	75	37	53	-18	9	17	+ 1087.791	
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9	17	5	+	79	41	9	-13	10	36	+ 1078.456	
9	17	6	+	81	38	41	-10	39	2	+ 1072.487	
9	17	7	+	83	34	15	- 8	6	16	+ 1065.680	
9	17	8	+	85	28	26	- 5	32	29	+ 1058.058	
9	17	9	+	87	21	47	- 2	57	55	+ 1049.648	
9	17	10	+	89	14	50	- 0	22	43	+ 1040.477	
9	17	10	8	LONG.			+ 89	31	23	PASS NO. 385 + 1039.031	
9	17	11	+	91	8	9	+ 2	12	56	+ 1030.577	
9	17	12	+	93	2	16	+ 4	48	49	+ 1019.979	
9	17	13	+	94	57	45	+ 7	24	44	+ 1008.717	
9	17	14	+	96	55	11	+10	0	30	+ 996.827	
9	17	15	+	98	55	12	+12	35	52	+ 984.345	
9	17	16	+100	58	26		+15	10	35	+ 971.311	
9	17	17	+103	5	32		+17	44	24	+ 957.766	
9	17	18	+105	17	18		+20	16	59	+ 943.750	
9	17	19	+107	34	29		+22	48	1	+ 929.308	

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TOKAWA 108  9 17 24  2.463  W68.6598   1799.545    NE         **
  9 17 25 +124  4 44  +36 55 33                          +  836.315
  9 17 26 +127 27 44  +39  1 11                          +  820.222
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TOKAWA 108  9 17 28 35.570  N58.3955   1316.412    NE
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  9 17 32 +153  3 15  +48 32 52                          +  724.988
  9 17 33 +158 12 28  +49 25 50                          +  709.870
  9 17 34 +163 33 10  +50  3 17                          +  695.123  TWILIGHT
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  9 17 36 +174 35 28  +50 28  7                          +  666.982  TWILIGHT
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  9 17 40 -163 49 50  +47 52 16                          +  617.757
  9 17 41 -158 53  3  +46 33 36                          +  607.255
  9 17 42 -154 11 19  +45  1 11                          +  597.583
  9 17 43 -149 45 19  +43 16 19                          +  588.791
  9 17 44 -145 35  7  +41 20 18                          +  580.929
  9 17 45 -141 40 14  +39 14 25                          +  574.041
STNFDU  98  9 17 45 48.607  W76.1806   1624.011    SE         **
  9 17 46 -137 59 52  +36 59 50                          +  568.166
GOLDST 103  9 17 46 40.847  W80.1591   1859.693    SE         **
  9 17 47 -134 32 56  +34 37 40                          +  563.343
WHITES 111  9 17 47 22.437  W88.8169   2608.135    SE         **
  9 17 48 -131 18 17  +32  8 56                          +  559.605
  9 17 49 -128 14 42  +29 34 32                          +  556.978
  9 17 50 -125 20 59  +26 55 17                          +  555.485
  9 17 51 -122 35 58  +24 11 57                          +  555.143
STNFDU  98  9 17 51  9.792  S77.6234   1673.989    SE
  9 17 52 -119 58 30  +21 25 11                          +  555.962
  9 17 53 -117 27 35  +18 35 35                          +  557.948
GOLDST 103  9 17 53 14.707  S83.4729   2091.472    SE
  9 17 54 -115  2 11  +15 43 44  208                     +  561.097
```

```
  9 17 55 -112 41 25   +12 50  7                          +  565.403
  9 17 56 -110 24 24   + 9 55 14                          +  570.850
  9 17 57 -108 10 18   + 6 59 30                          +  577.417
  9 17 58 -105 58 21   + 4  3 20                          +  585.075
  9 17 59 -103 47 49   + 1  7  8                          +  593.792
  9 18  0 -101 37 57   - 1 48 44                          +  603.526
  9 18  1 - 99 28  2   - 4 43 52                          +  614.232
  9 18  2 - 97 17 23   - 7 37 55                          +  625.859
  9 18  3 - 95  5 16   -10 30 32                          +  638.350
  9 18  4 - 92 50 58   -13 21 20                          +  651.646
  9 18  5 - 90 33 44   -16  9 57                          +  665.681
  9 18  6 - 88 12 49   -18 55 59                          +  680.387
  9 18  7 - 85 47 24   -21 39  2                          +  695.694
  9 18  8 - 83 16 40   -24 18 40                          +  711.527
  9 18  9 - 80 39 45   -26 54 25                          +  727.813
  9 18 10 - 77 55 44   -29 25 46                          +  744.473
  9 18 11 - 75  3 40   -31 52 12                          +  761.432
SNTAGO 122  9 18 11 32.159  W20.9230     817.897     SE          **
  9 18 12 - 72  2 37   -34 13  6                         +  778.612
SNTAGO 122  9 18 12 26.109  S18.0868     821.491     SE
  9 18 13 - 68 51 38   -36 27 49                         +  795.936
  9 18 14 - 65 29 48   -38 35 38                         +  813.327
  9 18 15 - 61 56 16   -40 35 45                         +  830.710
  9 18 16 - 58 10 22   -42 27 22                         +  848.011
  9 18 17 - 54 11 38   -44  9 33                         +  865.159
  9 18 18 - 49 59 55   -45 41 24                         +  882.083
  9 18 19 - 45 35 29   -47  1 58                         +  898.717
  9 18 20 - 40 59  8   -48 10 21                         +  914.997
  9 18 21 - 36 12 13   -49  5 41                         +  930.859
  9 18 22 - 31 16 39   -49 47 17                         +  946.246
  9 18 23 - 26 15  0   -50 14 35                         +  961.103
  9 18 24 - 21 10 10   -50 27 16                         +  975.377
  9 18 25 - 16  5 21   -50 25 17                         +  989.019
  9 18 26 - 11  3 43   -50  8 50                         + 1001.986
  9 18 27 -  6  8 18   -49 38 20                         + 1014.234
  9 18 28 -  1 21 36   -48 54 29                         + 1025.727
  9 18 29 +  3 14 21   -47 58  6                         + 1036.428
  9 18 30 +  7 38  6   -46 50  6                         + 1046.308
  9 18 31 + 11 48 51   -45 31 31                         + 1055.339
  9 18 32 + 15 46 15   -44  3 19                         + 1063.496  TWILIGHT
  9 18 33 + 19 30 23   -42 26 30                         + 1070.759  TWILIGHT
  9 18 34 + 23  1 40   -40 42  0                         + 1077.111  TWILIGHT
```

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  9 18 35 + 26 20 46  -38 50 39                          + 1082.537  TWILIGHT
JOBURG 118  9 18 35 35.742  558.2129   1766.498     NE
  9 18 36 + 29 28 29  -36 53 14                          + 1087.027  TWILIGHT
  9 18 37 + 32 25 40  -34 50 29                          + 1090.572  TWILIGHT
  9 18 38 + 35 13 14  -32 43  0                          + 1093.169  TWILIGHT
  9 18 39 + 37 52  7  -30 31 21                          + 1094.815  TWILIGHT
  9 18 40 + 40 23 12  -28 16  1                          + 1095.512
  9 18 41 + 42 47 20  -25 57 27                          + 1095.263
  9 18 42 + 45  5 21  -23 36  2                          + 1094.076
  9 18 43 + 47 18  0  -21 12  6                          + 1091.960
  9 18 44 + 49 26  1  -18 45 57                          + 1088.926
  9 18 45 + 51 30  6  -16 17 52                          + 1084.990
  9 18 46 + 53 30 52  -13 48  6                          + 1080.167
  9 18 47 + 55 28 56  -11 16 53                          + 1074.478
  9 18 48 + 57 24 56  - 8 44 25                          + 1067.942
  9 18 49 + 59 19 23  - 6 10 54                          + 1060.584
  9 18 50 + 61 12 53  - 3 36 32                          + 1052.429
  9 18 51 + 63  5 56  - 1  1 29                          + 1043.505
   9 18 51 23  LONG.  + 63 50 43  PASS NO.   386 + 1039.681
  9 18 52 + 64 59  7  + 1 34  2                          + 1033.842
  9 18 53 + 66 52 57  + 4  9 50                          + 1023.470
  9 18 54 + 68 48  0  + 6 45 44                          + 1012.423
  9 18 55 + 70 44 53  + 9 21 31                          + 1000.736
  9 18 56 + 72 44  9  +11 56 58                          +  988.445
  9 18 57 + 74 46 27  +14 31 50                          +  975.589
  9 18 58 + 76 52 30  +17  5 52                          +  962.208
  9 18 59 + 79  2 59  +19 38 45                          +  948.342
  9 19  0 + 81 18 41  +22 10 10                          +  934.036
  9 19  1 + 83 40 27  +24 39 45                          +  919.333
  9 19  2 + 86  9 13  +27  7  3                          +  904.279
  9 19  3 + 88 45 55  +29 31 36                          +  888.922
  9 19  4 + 91 31 38  +31 52 50                          +  873.310
  9 19  5 + 94 27 28  +34 10  8                          +  857.492
  9 19  6 + 97 34 35  +36 22 45                          +  841.521
  9 19  7 +100 54 11  +38 29 53                          +  825.447
  9 19  8 +104 27 24  +40 30 34                          +  809.326
  9 19  9 +108 15 19  +42 23 46                          +  793.211
  9 19 10 +112 18 47  +44  8 18                          +  777.158
  9 19 11 +116 38 22  +45 42 55                          +  761.224
  9 19 12 +121 14  8  +47  6 15                          +  745.466
  9 19 13 +126  5 34  +48 16 58                          +  729.942
  9 19 14 +131 11 20  +49 13 42                          +  714.711
```

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  9 19 15 +136 29 16  +49 55 13                          +  699.833
TOKAWA 108  9 19 15  9.551  N76.2540   1900.955    NE
  9 19 16 +141 56 21  +50 20 30                          +  685.366  TWILIGHT
  9 19 17 +147 28 53  +50 28 47                          +  671.371  TWILIGHT
  9 19 18 +153  2 40  +50 19 42                          +  657.906  TWILIGHT
  9 19 19 +158 33 26  +49 53 15                          +  645.031  TWILIGHT
  9 19 20 +163 57 13  +49  9 50                          +  632.803  TWILIGHT
  9 19 21 +169 10 36  +48 10 10                          +  621.279
  9 19 22 +174 11  0  +46 55 15                          +  610.516
  9 19 23 +178 56 40  +45 26 16                          +  600.567
  9 19 24 -176 33 18  +43 44 31                          +  591.483
  9 19 25 -172 19  5  +41 51 16                          +  583.314
  9 19 26 -168 20 20  +39 47 50                          +  576.104
  9 19 27 -164 36 20  +37 35 24                          +  569.898
  9 19 28 -161  6  3  +35 15  7                          +  564.732
BSANDS 100  9 19 28 23.224  N74.5737   1523.322    SE
  9 19 29 -157 48 21  +32 47 59                          +  560.641
  9 19 30 -154 42  2  +30 14 59                          +  557.654
  9 19 31 -151 45 53  +27 36 55                          +  555.796
  9 19 32 -148 58 43  +24 54 34                          +  555.084
  9 19 33 -146 19 24  +22  8 37                          +  555.532
BSANDS 100  9 19 33  2.201  E75.5355   1558.815    SE        **
  9 19 34 -143 46 53  +19 19 42                          +  557.146
  9 19 35 -141 20  8  +16 28 22                          +  559.926
  9 19 36 -138 58 15  +13 35  9                          +  563.866
  9 19 37 -136 40 19  +10 40 32                          +  568.953
  9 19 38 -134 25 31  + 7 44 57                          +  575.168
  9 19 39 -132 13  4  + 4 48 50                          +  582.485
  9 19 40 -130  2 13  + 1 52 35                          +  590.871
  9 19 41 -127 52 13  - 1  3 26                          +  600.289
  9 19 42 -125 42 22  - 3 58 49                          +  610.694
  9 19 43 -123 31 56  - 6 53 14                          +  622.036
  9 19 44 -121 20 14  - 9 46 17                          +  634.262
  9 19 45 -119  6 31  -12 37 37                          +  647.311
  9 19 46 -116 50  5  -15 26 53                          +  661.120
  9 19 47 -114 30  9  -18 13 39                          +  675.622
  9 19 48 -112  5 56  -20 57 33                          +  690.748
  9 19 49 -109 36 35  -23 38  9                          +  706.423
  9 19 50 -107  1 18  -26 14 59                          +  722.574
  9 19 51 -104 19  7  -28 47 34                          +  739.124
  9 19 52 -101 29  9  -31 15 21                          +  755.996
  9 19 53 - 98 30 25  -33 37 46                          +  773.114
```

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  9 19 54 - 95 21 59  -35 54 10                          +  790.399
  9 19 55 - 92  2 55  -38  3 50                          +  807.775
  9 19 56 - 88 32 22  -40  6  2                          +  825.167
  9 19 57 - 84 49 35  -41 59 55                          +  842.500
  9 19 58 - 80 54  3  -43 44 37                          +  859.702
  9 19 59 - 76 45 32  -45 19 12                          +  876.702
  9 20  0 - 72 24 11  -46 42 44                          +  893.433
  9 20  1 - 67 50 39  -47 54 18                          +  909.828
  9 20  2 - 63  6  8  -48 53  1                          +  925.826
  9 20  3 - 58 12 26  -49 38  8                          +  941.367
  9 20  4 - 53 11 58  -50  9  5                          +  956.395
  9 20  5 - 48  7 33  -50 25 28                          +  970.857
  9 20  6 - 43  2 20  -50 27  9                          +  984.702
  9 20  7 - 37 59 33  -50 14 18                          +  997.885
  9 20  8 - 33  2 14  -49 47 16                          + 1010.364
  9 20  9 - 28 13  4  -49  6 40                          + 1022.098
  9 20 10 - 23 34 13  -48 13 19                          + 1033.053
  9 20 11 - 19  7 15  -47  8  7                          + 1043.196
  9 20 12 - 14 53 10  -45 52  4                          + 1052.498
  9 20 13 - 10 52 23  -44 26  9                          + 1060.935  TWILIGHT
  9 20 14 -  7  4 56  -42 51 23                          + 1068.484  TWILIGHT
  9 20 15 -  3 30 28  -41  8 42                          + 1075.128  TWILIGHT
  9 20 16 -  0  8 22  -39 18 58                          + 1080.851  TWILIGHT
  9 20 17 +  3  2  7  -37 22 59                          + 1085.641  TWILIGHT
  9 20 18 +  6  1 51  -35 21 29                          + 1089.490  TWILIGHT
  9 20 19 +  8 51 44  -33 15  7                          + 1092.392  TWILIGHT
  9 20 20 + 11 32 42  -31  4 27                          + 1094.344  TWILIGHT
  9 20 21 + 14  5 39  -28 49 59                          + 1095.347
  9 20 22 + 16 31 27  -26 32 11                          + 1095.403
JOBURG 118  9 20 22 12.792  W53.1969   1633.244     NE         **
  9 20 23 + 18 50 54  -24 11 26                          + 1094.519
  9 20 24 + 21  4 49  -21 48  6                          + 1092.703
  9 20 25 + 23 13 55  -19 22 29                          + 1089.966
  9 20 26 + 25 18 53  -16 54 52                          + 1086.322
  9 20 27 + 27 20 24  -14 25 31                          + 1081.786
  9 20 28 + 29 19  6  -11 54 39                          + 1076.377
  9 20 29 + 31 15 32  - 9 22 29                          + 1070.116
  9 20 30 + 33 10 19  - 6 49 14                          + 1063.025
  9 20 31 + 35  3 58  - 4 15  5                          + 1055.128
  9 20 32 + 36 57  4  - 1 40 13                          + 1046.454
   9 20 32 38  LONG.  + 38 10  1  PASS NO.  387 + 1040.373
  9 20 33 + 38 50  8  + 0 55 10                          + 1037.030
```

9	20	34	+	40	43	43	+	3	30	53	+	1026.888	
9	20	35	+	42	38	24	+	6	6	45	+	1016.060	
9	20	36	+	44	34	43	+	8	42	33	+	1004.580	
9	20	37	+	46	33	18	+11	18	4		+	992.484	
9	20	38	+	48	34	45	+13	53	4		+	979.810	
9	20	39	+	50	39	45	+16	27	17		+	966.597	
9	20	40	+	52	49	1	+19	0	27		+	952.887	
9	20	41	+	55	3	17	+21	32	14		+	938.721	
9	20	42	+	57	23	24	+24	2	16		+	924.143	
9	20	43	+	59	50	16	+26	30	8		+	909.199	
9	20	44	+	62	24	49	+28	55	23		+	893.936	
9	20	45	+	65	8	5	+31	17	29		+	878.401	
9	20	46	+	68	1	12	+33	35	47		+	862.644	
9	20	47	+	71	5	17	+35	49	38		+	846.716	
9	20	48	+	74	21	32	+37	58	11		+	830.669	
9	20	49	+	77	51	8	+40	0	34		+	814.555	
9	20	50	+	81	35	8	+41	55	44		+	798.429	
9	20	51	+	85	34	30	+43	42	34		+	782.347	
9	20	52	+	89	49	52	+45	19	48		+	766.364	
9	20	53	+	94	21	26	+46	46	7		+	750.539	
9	20	54	+	99	8	52	+48	0	10		+	734.929	
9	20	55	+104	11	3		+49	0	35		+	719.592	
9	20	56	+109	26	1		+49	46	5		+	704.589	
9	20	57	+114	51	0		+50	15	36		+	689.977	TWILIGHT
9	20	58	+120	22	26		+50	28	18		+	675.818	TWILIGHT
9	20	59	+125	56	13		+50	23	42		+	662.170	TWILIGHT
9	21	0	+131	28	5		+50	1	42		+	649.093	TWILIGHT
9	21	1	+136	53	56		+49	22	36		+	636.645	TWILIGHT
TOKAWA	108	9	21	1	5.052		N76.6803		1796.123		SE		
9	21	2	+142	10	12		+48	27	2		+	624.883	
9	21	3	+147	14	5		+47	15	58		+	613.864	
9	21	4	+152	3	38		+45	50	30		+	603.643	
9	21	5	+156	37	42		+44	11	56		+	594.271	
9	21	6	+160	55	57		+42	21	33		+	585.799	
9	21	7	+164	58	36		+40	20	38		+	578.273	
9	21	8	+168	46	18		+38	10	26		+	571.738	
9	21	9	+172	20	0		+35	52	5		+	566.232	
9	21	10	+175	40	50		+33	26	39		+	561.791	
9	21	11	+178	49	57		+30	55	5		+	558.447	
9	21	12	-178	11	23		+28	18	15		+	556.224	
9	21	13	-175	22	0		+25	36	57		+	555.144	
9	21	14	-172	40	45		+23	57	52		+	555.221	

```
BSANDS 100  9 21 14 17.675  W72.6350    1415.851     SE        **
  9 21 15 -170  6 34  +20  3 39                       +   556.463
  9 21 16 -167 38 25  +17 12 53                       +   558.872
  9 21 17 -165 15 20  +14 20  6                       +   562.445
  9 21 18 -162 56 27  +11 25 47                       +   567.170
  9 21 19 -160 40 55  + 8 30 23                       +   573.030
BSANDS 100  9 21 19 23.884  S78.7400    1789.265     SE
  9 21 20 -158 27 55  + 5 34 21                       +   580.001
  9 21 21 -156 16 42  + 2 38  4                       +   588.054
  9 21 22 -154  6 31  - 0 18  5                       +   597.150
  9 21 23 -151 56 40  - 3 13 42                       +   607.249
  9 21 24 -149 46 26  - 6  8 25                       +   618.302
  9 21 25 -147 35  5  - 9  1 54                       +   630.255
  9 21 26 -145 21 56  -11 53 45                       +   643.052
  9 21 27 -143  6 13  -14 43 37                       +   656.629
  9 21 28 -140 47 13  -17 31  7                       +   670.920
  9 21 29 -138 24  8  -20 15 50                       +   685.857
  9 21 30 -135 56  9  -22 57 22                       +   701.366
  9 21 31 -133 22 25  -25 35 15                       +   717.375
  9 21 32 -130 42  1  -28  9  1                       +   733.807
  9 21 33 -127 54  5  -30 38  8                       +   750.585
  9 21 34 -124 57 37  -33  2  1                       +   767.633
  9 21 35 -121 51 41  -35 20  3                       +   784.872
  9 21 36 -118 35 21  -37 31 33                       +   802.226
  9 21 37 -115  7 42  -39 35 46                       +   819.620
  9 21 38 -111 28  1  -41 31 53                       +   836.977
  9 21 39 -107 35 41  -43 19  1                       +   854.226
  9 21 40 -103 30 22  -44 56 17                       +   871.295
  9 21 41 - 99 12  8  -46 22 44                       +   888.116
  9 21 42 - 94 41 30  -47 37 25                       +   904.622
  9 21 43 - 89 59 31  -48 39 28                       +   920.750
  9 21 44 - 85  7 50  -49 28  6                       +   936.439
  9 21 45 - 80  8 44  -50  2 40                       +   951.632
  9 21 46 - 75  4 56  -50 22 44                       +   966.276
  9 21 47 - 69 59 32  -50 28  7                       +   980.319
  9 21 48 - 64 55 46  -50 18 52                       +   993.715
  9 21 49 - 59 56 44  -49 55 20                       +  1006.419
  9 21 50 - 55  5 13  -49 18  4                       +  1018.392
  9 21 51 - 50 23 33  -48 27 48                       +  1029.596
  9 21 52 - 45 53 26  -47 25 28                       +  1039.999
  9 21 53 - 41 36  1  -46 12  1                       +  1049.570
  9 21 54 - 37 31 52  -44 48 27                       +  1058.284
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  9 21 55 - 33 41  5   -43 15 47                          + 1066.118  TWILIGHT
  9 21 56 - 30  3 23   -41 34 58                          + 1073.052  TWILIGHT
  9 21 57 - 26 38 15   -39 46 54                          + 1079.070  TWILIGHT
  9 21 58 - 23 24 56   -37 52 23                          + 1084.159  TWILIGHT
  9 21 59 - 20 22 35   -35 52 11                          + 1088.311  TWILIGHT
  9 22  0 - 17 30 19   -33 46 58                          + 1091.517  TWILIGHT
  9 22  1 - 14 47 12   -31 37 18                          + 1093.774  TWILIGHT
  9 22  2 - 12 12 20   -29 23 44                          + 1095.083
  9 22  3 -  9 44 51   -27  6 44                          + 1095.445
  9 22  4 -  7 23 53   -24 46 41                          + 1094.864
  9 22  5 -  5  8 41   -22 23 57                          + 1093.349
  9 22  6 -  2 58 27   -19 58 53                          + 1090.910
  9 22  7 -  0 52 31   -17 31 45                          + 1087.559
SANANA 116  9 22  7 25.385  S69.6435   2245.375    NE
  9 22  8 +  1  9 48   -15  2 49                          + 1083.311
  9 22  9 +  3  9  7   -12 32 19                          + 1078.186
  9 22 10 +  5  6  3   -10  0 29                          + 1072.201
  9 22 11 +  7  1 10   - 7 27 30                          + 1065.378
  9 22 12 +  8 55  2   - 4 53 35                          + 1057.744
  9 22 13 + 10 48 11   - 2 18 54                          + 1049.322
SANANA 116  9 22 13 53.560  E61.6411   1822.620    NE          **
   9 22 13 53  LONG.  + 12 29 18  PASS NO.  388 + 1041.107
  9 22 14 + 12 41 11   + 0 16 21                          + 1040.141
  9 22 15 + 14 34 35   + 2 51 58                          + 1030.232
  9 22 16 + 16 28 54   + 5 27 47                          + 1019.626
  9 22 17 + 18 24 44   + 8  3 35                          + 1008.357
  9 22 18 + 20 22 40   +10 39  9                          +  996.460
  9 22 19 + 22 23 18   +13 14 16                          +  983.972
  9 22 20 + 24 27 19   +15 48 40                          +  970.932
  9 22 21 + 26 35 24   +18 22  5                          +  957.382
  9 22 22 + 28 48 17   +20 54 12                          +  943.361
  9 22 23 + 31  6 48   +23 24 40                          +  928.913
  9 22 24 + 33 31 50   +25 53  5                          +  914.085
  9 22 25 + 36  4 18   +28 19  0                          +  898.921
  9 22 26 + 38 45 13   +30 41 54                          +  883.469
  9 22 27 + 41 35 40   +33  1 11                          +  867.778
  9 22 28 + 44 36 49   +35 16 11                          +  851.899
  9 22 29 + 47 49 48   +37 26  8                          +  835.883
  9 22 30 + 51 15 50   +39 30  8                          +  819.783
  9 22 31 + 54 56  0   +41 27 12                          +  803.653
  9 22 32 + 58 51 18   +43 16 13                          +  787.548
  9 22 33 + 63  2 28   +44 56  0                          +  771.523
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  9 22 34 + 67 29 50   +46 25 12                          +   755.637
  9 22 35 + 72 13 12   +47 42 30                          +   739.946
  9 22 36 + 77 11 40   +48 46 30                          +   724.510
  9 22 37 + 82 23 30   +49 35 55                          +   709.388
  9 22 38 + 87 46  9   +50  9 37                          +   694.638  TWILIGHT
  9 22 39 + 93 16 12   +50 26 41                          +   680.321  TWILIGHT
  9 22 40 + 98 49 42   +50 26 33                          +   666.496  TWILIGHT
  9 22 41 +104 22 23   +50  9  1                          +   653.223  TWILIGHT
  9 22 42 +109 50  4   +49 34 16                          +   640.561  TWILIGHT
  9 22 43 +115  9  2   +48 42 52                          +   628.567
  9 22 44 +120 16 16   +47 35 42                          +   617.298
  9 22 45 +125  9 35   +46 13 51                          +   606.809
  9 22 46 +129 47 40   +44 38 33                          +   597.155
  9 22 47 +134  9 57   +42 51  7                          +   588.384
TOKAWA 108  9 22 47 46.181  N55.6183     952.053     SE
  9 22 48 +138 16 33   +40 52 49                          +   580.546
  9 22 49 +142  8  1   +38 44 55                          +   573.685
  9 22 50 +145 45 12   +36 28 35                          +   567.842
TOKAWA 108  9 22 50 41.297  E65.6526    1169.681     SE         **
  9 22 51 +149  9 14   +34  4 53                          +   563.055
  9 22 52 +152 21 16   +31 34 50                          +   559.355
  9 22 53 +155 22 31   +28 59 18                          +   556.770
  9 22 54 +158 14 10   +26 19  5                          +   555.322
  9 22 55 +160 57 25   +23 34 55                          +   555.028
  9 22 56 +163 33 21   +20 47 27                          +   555.898
  9 22 57 +166  2 58   +17 57 17                          +   557.936
  9 22 58 +168 27 17   +15  4 57                          +   561.140
  9 22 59 +170 47 11   +12 10 58                          +   565.501
  9 23  0 +173  3 31   + 9 15 47                          +   571.004
  9 23  1 +175 17  7   + 6 19 51                          +   577.627
  9 23  2 +177 28 45   + 3 23 34                          +   585.341
  9 23  3 +179 39  9   + 0 27 20                          +   594.113
  9 23  4 -178 10 57   - 2 28 29                          +   603.900
  9 23  5 -176  0 51   - 5 23 31                          +   614.658
  9 23  6 -173 49 50   - 8 17 23                          +   626.333
  9 23  7 -171 37 10   -11  9 44                          +   638.870
SAMOAI 114  9 23  7 24.115  N21.1126     685.816     SE
  9 23  8 -169 22 10   -14  0 12                          +   652.209
SAMOAI 114  9 23  8  6.797  E16.3091     678.497     SE         **
  9 23  9 -167  4  3   -16 48 23                          +   666.282
  9 23 10 -164 42  3   -19 33 54                          +   681.023
  9 23 11 -162 15 21   -22 16 20                          +   696.360
```

9	23	12	-159	43	7	-24	55	14	+	712.219	
9	23	13	-157	4	28	-27	30	9	+	728.525	
9	23	14	-154	18	29	-30	0	32	+	745.202	
9	23	15	-151	24	14	-32	25	52	+	762.172	
9	23	16	-148	20	45	-34	45	30	+	779.358	
9	23	17	-145	7	4	-36	58	46	+	796.683	
9	23	18	-141	42	19	-39	4	57	+	814.070	
9	23	19	-138	5	41	-41	3	14	+	831.445	
9	23	20	-134	16	31	-42	52	46	+	848.734	
9	23	21	-130	14	25	-44	32	40	+	865.865	
9	23	22	-125	59	20	-46	1	57	+	882.769	
9	23	23	-121	31	40	-47	19	43	+	899.379	
9	23	24	-116	52	19	-48	25	4	+	915.630	
9	23	25	-112	2	49	-49	17	9	+	931.462	
9	23	26	-107	5	15	-49	55	19	+	946.816	
9	23	27	-102	2	16	-50	19	4	+	961.637	
9	23	28	-	96	56	52	-50	28	9	+	975.873
9	23	29	-	91	52	19	-50	22	33	+	989.477
9	23	30	-	86	51	43	-50	2	33	+	1002.402
9	23	31	-	81	58	1	-49	28	38	+	1014.609
9	23	32	-	77	13	38	-48	41	33	+	1026.059
9	23	33	-	72	40	27	-47	42	7	+	1036.718
9	23	34	-	68	19	44	-46	31	20	+	1046.556
9	23	35	-	64	12	12	-45	10	11	+	1055.544
9	23	36	-	60	18	3	-43	39	41	+	1063.660 TWILIGHT
9	23	37	-	56	37	6	-42	0	48	+	1070.882 TWILIGHT
9	23	38	-	53	8	52	-40	14	26	+	1077.194 TWILIGHT
9	23	39	-	49	52	39	-38	21	27	+	1082.582 TWILIGHT
9	23	40	-	46	47	38	-36	22	35	+	1087.034 TWILIGHT
9	23	41	-	43	52	56	-34	18	33	+	1090.544 TWILIGHT
9	23	42	-	41	7	37	-32	9	56	+	1093.107 TWILIGHT
9	23	43	-	38	30	47	-29	57	17	+	1094.721 TWILIGHT
9	23	44	-	36	1	33	-27	41	5	+	1095.388
9	23	45	-	33	39	2	-25	21	45	+	1095.111
9	23	46	-	31	22	28	-22	59	40	+	1093.897
9	23	47	-	29	11	4	-20	35	9	+	1091.757
9	23	48	-	27	4	8	-18	8	31	+	1088.701
9	23	49	-	25	1	0	-15	40	1	+	1084.745
9	23	50	-	23	1	0	-13	9	54	+	1079.903
9	23	51	-	21	3	32	-10	38	24	+	1074.196
9	23	52	-	19	8	2	-	8	5	42	+ 1067.646
9	23	53	-	17	13	56	-	5	32	1	+ 1060.275

```
  9 23 54 - 15 20 40   - 2 57 32                                  + 1052.108
  9 23 55 - 13 27 42   - 0 22 26                                  + 1043.174
SANANA 116   9 23 55   8.498   W63.4580    1893.179      NE          **
   9 23 55   8  LONG.   - 13 11 20   PASS NO.   389 + 1041.776
  9 23 56 - 11 34 29   + 2 13  5                                  + 1033.501
  9 23 57 -  9 40 29   + 4 48 50                                  + 1023.121
  9 23 58 -  7 45  6   + 7 24 37                                  + 1012.065
  9 23 59 -  5 47 47   +10  0 14                                  + 1000.372
 10  0  0 -  3 47 55   +12 35 27                                  +  988.075
 10  0  1 -  1 44 51   +15 10  1                                  +  975.212
SANANA 116 10  0  1 49.465   N73.6781    2259.068      NE
 10  0  2 +  0 22  6   +17 43 40                                  +  961.825
 10  0  3 +  2 33 40   +20 16  6                                  +  947.955
 10  0  4 +  4 50 39   +22 46 58                                  +  933.643
 10  0  5 +  7 13 54   +25 15 54                                  +  918.934
HOLBRG 101 10  0  5 35.872   582.9300    2824.496      NE
 10  0  6 +  9 44 21   +27 42 27                                  +  903.874
 10  0  7 + 12 22 59   +30  6  7                                  +  888.511
 10  0  8 + 15 10 52   +32 26 20                                  +  872.892
 10  0  9 + 18  9  8   +34 42 27                                  +  857.068
 10  0 10 + 21 18 57   +36 53 43                                  +  841.090
 10  0 11 + 24 41 29   +38 59 16                                  +  825.009
 10  0 12 + 28 17 53   +40 58  9                                  +  808.881
 10  0 13 + 32  9 11   +42 49 18                                  +  792.758
 10  0 14 + 36 16 11   +44 31 31                                  +  776.699
 10  0 15 + 40 39 20   +46  3 31                                  +  760.757
 10  0 16 + 45 18 35   +47 23 58                                  +  744.993
 10  0 17 + 50 13 13   +48 31 28                                  +  729.464
 10  0 18 + 55 21 46   +49 24 43                                  +  714.229
 10  0 19 + 60 41 51   +50  2 32                                  +  699.347
 10  0 20 + 66 10 16   +50 23 55                                  +  684.878  TWILIGHT
 10  0 21 + 71 43 11   +50 28 14                                  +  670.883  TWILIGHT
 10  0 22 + 77 16 23   +50 15 10                                  +  657.420  TWILIGHT
 10  0 23 + 82 45 40   +49 44 49                                  +  644.549  TWILIGHT
 10  0 24 + 88  7  8   +48 57 39                                  +  632.328  TWILIGHT
 10  0 25 + 93 17 34   +47 54 28                                  +  620.815
 10  0 26 + 98 14 34   +46 36 18                                  +  610.065
 10  0 27 +102 56 36   +45  4 21                                  +  600.131
 10  0 28 +107 22 57   +43 19 56                                  +  591.067
 10  0 29 +111 33 31   +41 24 20                                  +  582.921
 10  0 30 +115 28 47   +39 18 49                                  +  575.739
 10  0 31 +119  9 33   +37  4 34                                  +  569.563
```

```
TOKAWA 108 10  0 31 56.791  W74.5825    1529.154     SE        **
 10  0 32 +122 36 50   +34 42 42                      +   564.431
 10  0 33 +125 51 51   +32 14 12                      +   560.378
 10  0 34 +128 55 46   +29 40  1                      +   557.433
 10  0 35 +131 49 48   +27  0 56                      +   555.619
 10  0 36 +134 35  7   +24 17 43                      +   554.955
 10  0 37 +137 12 50   +21 31  3                      +   555.452
TOKAWA 108 10  0 37  3.310  S77.2208    1651.065     SE
 10  0 38 +139 44  0   +18 41 31                      +   557.119
 10  0 39 +142  9 36   +15 49 42                      +   559.953
 10  0 40 +144 30 34   +12 56  5                      +   563.948
 10  0 41 +146 47 46   +10  1  9                      +   569.091
 10  0 42 +149  2  1   + 7  5 21                      +   575.362
 10  0 43 +151 14  7   + 4  9  5                      +   582.735
 10  0 44 +153 24 47   + 1 12 46                      +   591.177
 10  0 45 +155 34 45   - 1 43 13                      +   600.648
 10  0 46 +157 44 46   - 4 38 31                      +   611.105
 10  0 47 +159 55 30   - 7 32 46                      +   622.497
 10  0 48 +162  7 42   -10 25 34                      +   634.770
 10  0 49 +164 22  4   -13 16 36                      +   647.862
 10  0 50 +166 39 21   -16  5 26                      +   661.711
 10  0 51 +169  0 20   -18 51 43                      +   676.249
 10  0 52 +171 25 48   -21 35  2                      +   691.406
 10  0 53 +173 56 34   -24 14 56                      +   707.108
 10  0 54 +176 33 33   -26 50 57                      +   723.281
 10  0 55 +179 17 37   -29 22 36                      +   739.849
 10  0 56 -177 50 17   -31 49 19                      +   756.734
 10  0 57 -174 49 11   -34 10 30                      +   773.859
 10  0 58 -171 38  7   -36 25 30                      +   791.147
 10  0 59 -168 16 12   -38 33 36                      +   808.521
 10  1  0 -164 42 35   -40 34  1                      +   825.906
 10  1  1 -160 56 33   -42 25 53                      +   843.228
 10  1  2 -156 57 40   -44  8 20                      +   860.414
 10  1  3 -152 45 46   -45 40 26                      +   877.395
 10  1  4 -148 21  8   -47  1 13                      +   894.102
 10  1  5 -143 44 32   -48  9 48                      +   910.471
 10  1  6 -138 57 19   -49  5 19                      +   926.439
 10  1  7 -134  1 28   -49 47  4                      +   941.948
 10  1  8 -128 59 29   -50 14 29                      +   956.940
 10  1  9 -123 54 19   -50 27 15                      +   971.365
 10  1 10 -118 49  9   -50 25 19                      +   985.172
 10  1 11 -113 47 12   -50  8 53                      +   998.314
```

```
 10   1 12 -108 51 26   -49 38 24                          + 1010.752
 10   1 13 -104  4 28   -48 54 31                          + 1022.444
 10   1 14 - 99 28 17   -47 58  4                          + 1033.356
 10   1 15 - 95  4 18   -46 50  1                          + 1043.456
 10   1 16 - 90 53 23   -45 31 21                          + 1052.716
 10   1 17 - 86 55 51   -44  3  4                          + 1061.111  TWILIGHT
 10   1 18 - 83 11 36   -42 26 10                          + 1068.620  TWILIGHT
 10   1 19 - 79 40 14   -40 41 35                          + 1075.223  TWILIGHT
 10   1 20 - 76 21  4   -38 50  9                          + 1080.907  TWILIGHT
 10   1 21 - 73 13 20   -36 52 40                          + 1085.660  TWILIGHT
AGASTA 123 10  1 21 59.746  S56.7757    1728.469     NE
SNTAGO 122 10  1 21 51.486  S13.2497    1113.563     NE
 10   1 22 - 70 16  8   -34 49 51                          + 1089.473  TWILIGHT
SNTAGO 122 10  1 22 47.433  E14.7770    1122.774     NE         **
 10   1 23 - 67 28 34   -32 42 18                          + 1092.341  TWILIGHT
 10   1 24 - 64 49 42   -30 30 36                          + 1094.260  TWILIGHT
 10   1 25 - 62 18 38   -28 15 15                          + 1095.232
 10   1 26 - 59 54 32   -25 56 39                          + 1095.260
AGASTA 123 10  1 26 58.972  E57.8461    1770.209     NE         **
 10   1 27 - 57 36 34   -23 35 13                          + 1094.349
 10   1 28 - 55 23 57   -21 11 17                          + 1092.508
 10   1 29 - 53 15 59   -18 45  9                          + 1089.748
 10   1 30 - 51 11 58   -16 17  6                          + 1086.083
 10   1 31 - 49 11 15   -13 47 23                          + 1081.528
 10   1 32 - 47 13 15   -11 16 13                          + 1076.102
 10   1 33 - 45 17 19   - 8 43 49                          + 1069.825
 10   1 34 - 43 22 57   - 6 10 23                          + 1062.720
 10   1 35 - 41 29 32   - 3 36  6                          + 1054.812
 10   1 36 - 39 36 34   - 1  1 10                          + 1046.126
  10  1 36 23  LONG.   - 38 52  0  PASS NO.   390 + 1042.410
 10   1 37 - 37 43 29   + 1 34 14                          + 1036.693
 10   1 38 - 35 49 45   + 4  9 55                          + 1026.542
 10   1 39 - 33 54 48   + 6 45 41                          + 1015.706
 10   1 40 - 31 58  3   + 9 21 19                          + 1004.218
 10   1 41 - 29 58 55   +11 56 37                          +  992.116
 10   1 42 - 27 56 45   +14 31 20                          +  979.435
 10   1 43 - 25 50 53   +17  5 12                          +  966.217
 10   1 44 - 23 40 35   +19 37 56                          +  952.501
 10   1 45 - 21 25  5   +22  9 11                          +  938.329
 10   1 46 - 19  3 32   +24 38 36                          +  923.745
 10   1 47 - 16 35  2   +27  5 45                          +  908.796
 10   1 48 - 13 58 37   +29 30  9                          +  893.526
```

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 10   1 49 - 11 13 14   +31 51 15                          +   877.985
 10   1 50 -  8 17 46   +34  8 26                          +   862.221
 10   1 51 -  5 11  3   +36 20 57                          +   846.286
 10   1 52 -  1 51 55   +38 28  0                          +   830.231
 10   1 53 +  1 40 48   +40 28 39                          +   814.110
 10   1 54 +  5 28  9   +42 21 50                          +   797.977
HOLBRG 101 10  1 54 48.304  S43.1225    1027.403     NE
 10   1 55 +  9 31  0   +44  6 24                          +   781.888
 10   1 56 + 13 49 56   +45 41  7                          +   765.899
 10   1 57 + 18 25  1   +47  4 36                          +   750.066
HOLBRG 101 10  1 59 14.221  E72.7202    1742.164     NE          **
 10   1 58 + 23 15 46   +48 15 31                          +   734.450
 10   1 59 + 28 20 50   +49 12 31                          +   719.109
 10   2  0 + 33 38  8   +49 54 22                          +   704.101
 10   2  1 + 39  4 40   +50 20  3                          +   689.488  TWILIGHT
 10   2  2 + 44 36 45   +50 28 47                          +   675.328  TWILIGHT
 10   2  3 + 50 10 13   +50 20 11                          +   661.681  TWILIGHT
 10   2  4 + 55 40 48   +49 54 15                          +   648.608  TWILIGHT
 10   2  5 + 61  4 32   +49 11 21                          +   636.166  TWILIGHT
 10   2  6 + 66 18  0   +48 12 13                          +   624.413
HOLBRG 101 10  2  4 44.243  E81.6178    3639.449     SE          **
 10   2  7 + 71 18 35   +46 57 49                          +   613.407
 10   2  8 + 76  4 31   +45 29 19                          +   603.200
 10   2  9 + 80 34 54   +43 48  1                          +   593.847
 10   2 10 + 84 49 29   +41 55 12                          +   585.397
 10   2 11 + 88 48 36   +39 52  8                          +   577.897
 10   2 12 + 92 33  0   +37 40  3                          +   571.392
 10   2 13 + 96  3 40   +35 20  3                          +   565.919
 10   2 14 + 99 21 43   +32 53 12                          +   561.515
 10   2 15 +102 28 22   +30 20 24                          +   558.211
 10   2 16 +105 24 50   +27 42 31                          +   556.033
 10   2 17 +108 12 17   +25  0 18                          +   554.999
 10   2 18 +110 51 52   +22 14 28                          +   555.126
 10   2 19 +113 24 39   +19 25 37                          +   556.419
 10   2 20 +115 51 36   +16 34 19                          +   558.882
 10   2 21 +118 13 42   +13 41  7                          +   562.510
 10   2 22 +120 31 49   +10 46 28                          +   567.291
 10   2 23 +122 46 46   +  7 50 49                          +   573.208
 10   2 24 +124 59 21   +  4 54 37                          +   580.235
 10   2 25 +127 10 20   +  1 58 15                          +   588.343
 10   2 26 +129 20 27   -  0 57 53                          +   597.494
 10   2 27 +131 30 25   -  3 53 26                          +   607.646
```

10	2	28	+133	40	56	- 6	48	1		+	618.749	
10	2	29	+135	52	43	- 9	41	16		+	630.750	
10	2	30	+138	6	29	-12	32	50		+	643.591	
10	2	31	+140	23	0	-15	22	19		+	657.209	
10	2	32	+142	43	0	-18	9	20		+	671.537	
10	2	33	+145	7	16	-20	53	29		+	686.507	
10	2	34	+147	36	38	-23	34	21		+	702.045	
10	2	35	+150	11	59	-26	11	27		+	718.078	
10	2	36	+152	54	12	-28	44	19		+	734.528	
10	2	37	+155	44	14	-31	12	23		+	751.321	
10	2	38	+158	43	0	-33	35	5		+	768.377	
10	2	39	+161	51	30	-35	51	46		+	785.621	
10	2	40	+165	10	38	-38	1	44		+	802.974	
10	2	41	+168	41	18	-40	4	13		+	820.362	
10	2	42	+172	24	12	-41	58	23		+	837.710	
10	2	43	+176	19	52	-43	43	20		+	854.944	
10	2	44	-179	31	27	-45	18	10		+	871.995	
10	2	45	-175	9	54	-46	41	56		+	888.793	
10	2	46	-170	36	7	-47	53	42		+	905.273	
10	2	47	-165	51	20	-48	52	36		+	921.372	
10	2	48	-160	57	21	-49	37	53		+	937.030	
10	2	49	-155	56	33	-50	8	57		+	952.189	
10	2	50	-150	51	47	-50	25	26		+	966.796	
10	2	51	-145	46	13	-50	27	11		+	980.801	
10	2	52	-140	43	6	-50	14	21		+	994.157	
10	2	53	-135	45	28	-49	47	19		+	1006.820	
10	2	54	-130	56	0	-49	6	42		+	1018.750	
10	2	55	-126	16	53	-48	13	18		+	1029.912	
10	2	56	-121	49	42	-47	8	3		+	1040.273	
10	2	57	-117	35	25	-45	51	55		+	1049.801	
10	2	58	-113	34	30	-44	25	56		+	1058.473	
10	2	59	-109	46	56	-42	51	4		+	1066.266	TWILIGHT
10	3	0	-106	12	22	-41	8	18		+	1073.159	TWILIGHT
10	3	1	-102	50	13	-39	18	29		+	1079.139	TWILIGHT
10	3	2	- 99	39	42	-37	22	25		+	1084.190	TWILIGHT
10	3	3	- 96	39	57	-35	20	51		+	1088.305	TWILIGHT
10	3	4	- 93	50	4	-33	14	26		+	1091.476	TWILIGHT
10	3	5	- 91	9	5	-31	3	42		+	1093.701	TWILIGHT
10	3	6	- 88	36	10	-28	[illegible]	12		+	1094.978	
10	3	7	- 86	10	24	-26	[illegible]	23		+	1095.310	
10	3	8	- 83	50	59	-24	10	37		+	1094.703	
AGASTA	123	10	3	8	13.869	W58.9676			1807.384	NE		**

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 10   3   9 -  81 37   7   -21 47 17                          + 1093.162
 10   3  10 -  79 28   4   -19 21 40                          + 1090.700
 10   3  11 -  77 23   8   -16 54  5                          + 1087.328
LIMAPU 124 10   3 11   6.719   S30.5767    1231.628     NE
 10   3  12 -  75 21  41   -14 24 46                          + 1083.061
 10   3  13 -  73 23   4   -11 53 57                          + 1077.917
LIMAPU 124 10   3 13   2.755   E24.8233    1169.483     NE          **
 10   3  14 -  71 26  41   - 9 21 51                          + 1071.916
 10   3  15 -  69 31  59   - 6 48 41                          + 1065.080
 10   3  16 -  67 38  25   - 4 14 37                          + 1057.432
 10   3  17 -  65 45  24   - 1 39 51                          + 1048.999
  10   3 17 38  LONG.   - 64 32 42  PASS NO.   391 + 1043.085
 10   3  18 -  63 52  25   + 0 55 25                          + 1039.807
 10   3  19 -  61 58  56   + 3 31  1                          + 1029.889
 10   3  20 -  60  4  22   + 6  6 45                          + 1019.275
 10   3  21 -  58  8   9   + 8 42 24                          + 1007.998
 10   3  22 -  56  9  43   +11 17 47                          +  996.094
 10   3  23 -  54  8  24   +13 52 37                          +  983.600
 10   3  24 -  52  3  33   +16 26 41                          +  970.554
PANTIG 120 10   3 24 16.148   E55.6057    1520.668     NE          **
 10   3  25 -  49 54  28   +18 59 41                          +  956.997
 10   3  26 -  47 40  24   +21 31 18                          +  942.971
 10   3  27 -  45 20  30   +24  1 11                          +  928.518
 10   3  28 -  42 53  54   +26 28 54                          +  913.683
 10   3  29 -  40 19  37   +28 54  0                          +  898.512
 10   3  30 -  37 36  39   +31 15 57                          +  883.054
 10   3  31 -  34 43  54   +33 34  8                          +  867.356
 10   3  32 -  31 40  13   +35 47 52                          +  851.470
 10   3  33 -  28 24  24   +37 56 21                          +  835.447
 10   3  34 -  24 55  18   +39 58 40                          +  819.340
 10   3  35 -  21 11  51   +41 53 49                          +  803.202
 10   3  36 -  17 13   5   +43 40 40                          +  787.089
 10   3  37 -  12 58  21   +45 17 59                          +  771.058
 10   3  38 -   8 27  27   +46 44 26                          +  755.165
HDLBRG 101 10   3 40 29.798   W28.7484     804.520     NE          **
 10   3  39 -   3 40  43   +47 58 40                          +  739.468
 10   3  40 +   1 20  47   +48 59 20                          +  724.026
 10   3  41 +   6 35   7   +49 45 10                          +  708.900
HDLBRG 101 10   3 41 23.686   N 5.7084     705.602     NE
 10   3  42 +  11 59  31   +50 15  3                          +  694.147  TWILIGHT
 10   3  43 +  17 30  28   +50 28 11                          +  679.829  TWILIGHT
 10   3  44 +  23  3  53   +50 24  3                          +  666.004  TWILIGHT
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```
 10   3 45 + 28 35 32   +50  2 34                          +   652.735  TWILIGHT
 10   3 46 + 34  1 18   +49 23 59                          +   640.077  TWILIGHT
 10   3 47 + 39 17 37   +48 28 57                          +   628.092
 10   3 48 + 44 21 40   +47 18 23                          +   616.834
HOLBRG 101 10   3 45 59.944   E72.3211    1929.518     SE         **
 10   3 49 + 49 11 27   +45 53 25                          +   606.360
 10   3 50 + 53 45 50   +44 15 19                          +   596.723
 10   3 51 + 58  4 26   +42 25 21                          +   587.973
 10   3 52 + 62  7 28   +40 24 50                          +   580.161
 10   3 53 + 65 55 33   +38 14 59                          +   573.328
 10   3 54 + 69 29 38   +35 56 57                          +   567.518
 10   3 55 + 72 50 49   +33 31 46                          +   562.767
 10   3 56 + 76  0 17   +31  0 26                          +   559.106
 10   3 57 + 78 59 16   +28 23 48                          +   556.564
 10   3 58 + 81 48 57   +25 42 39                          +   555.163
 10   3 59 + 84 30 28   +22 57 41                          +   554.918
 10   4  0 + 87  4 54   +20  9 33                          +   555.839
 10   4  1 + 89 33 17   +17 18 49                          +   557.930
 10   4  2 + 91 56 34   +14 26  3                          +   561.189
 10   4  3 + 94 15 38   +11 31 43                          +   565.606
 10   4  4 + 96 31 21   + 8 36 16                          +   571.165
 10   4  5 + 98 44 29   + 5 40  9                          +   577.845
 10   4  6 +100 55 50   + 2 43 46                          +   585.615
 10   4  7 +103  6  8   - 0 12 30                          +   594.441
 10   4  8 +105 16  5   - 3  8 16                          +   604.282
 10   4  9 +107 26 25   - 6  3 10                          +   615.091
 10   4 10 +109 37 51   - 8 56 50                          +   626.815
 10   4 11 +111 51  4   -11 48 54                          +   639.398
 10   4 12 +114  6 50   -14 39  0                          +   652.778
 10   4 13 +116 25 54   -17 26 44                          +   666.890
 10   4 14 +118 49  2   -20 11 42                          +   681.665
 10   4 15 +121 17  4   -22 53 30                          +   697.032
 10   4 16 +123 50 51   -25 31 39                          +   712.916
 10   4 17 +126 31 17   -28  5 42                          +   729.242
 10   4 18 +129 19 17   -30 35  5                          +   745.934
OOMERA 119 10   4 18 12.555   W45.6944    1019.244     SE         **
 10   4 19 +132 15 47   -32 59 16                          +   762.915
 10   4 20 +135 21 47   -35 17 35                          +   780.107
OOMERA 119 10   4 20 26.204   S40.2051     993.354     SE
 10   4 21 +138 38 12   -37 29 22                          +   797.432
 10   4 22 +142  5 55   -39 33 52                          +   814.815
 10   4 23 +145 45 43   -41 30 16                          +   832.182
```

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 10   4 24 +149 38 12   -43 17 40                          +   849.457
 10   4 25 +153 43 40   -44 55 11                          +   866.571
 10   4 26 +158  2  6   -46 21 52                          +   883.454
 10   4 27 +162 32 58   -47 36 46                          +   900.039
 10   4 28 +167 15 13   -48 39  1                          +   916.262
 10   4 29 +172  7 10   -49 27 48                          +   932.063
 10   4 30 +177  6 36   -50  2 30                          +   947.383
 10   4 31 -177 49 15   -50 22 41                          +   962.168
 10   4 32 -172 43 31   -50 28  8                          +   976.366
 10   4 33 -167 39 23   -50 18 55                          +   989.930
 10   4 34 -162 40  2   -49 55 23                          +  1002.815
 10   4 35 -157 48 13   -49 18  6                          +  1014.981
 10   4 36 -153  6 17   -48 27 48                          +  1026.388
 10   4 37 -148 35 56   -47 25 24                          +  1037.005
 10   4 38 -144 18 20   -46 11 53                          +  1046.800
 10   4 39 -140 14  1   -44 48 14                          +  1055.746
 10   4 40 -136 23  5   -43 15 29                          +  1063.821  TWILIGHT
 10   4 41 -132 45 18   -41 34 35                          +  1071.002  TWILIGHT
 10   4 42 -129 20  6   -39 46 26                          +  1077.275  TWILIGHT
 10   4 43 -126  6 45   -37 51 51                          +  1082.624  TWILIGHT
 10   4 44 -123  4 23   -35 51 34                          +  1087.040  TWILIGHT
 10   4 45 -120 12  6   -33 46 17                          +  1090.514  TWILIGHT
 10   4 46 -117 28 59   -31 36 34                          +  1093.044  TWILIGHT
 10   4 47 -114 54  8   -29 22 58                          +  1094.626  TWILIGHT
 10   4 48 -112 26 41   -27  5 55                          +  1095.263
 10   4 49 -110  5 45   -24 45 51                          +  1094.959
 10   4 50 -107 50 35   -22 23  7                          +  1093.720
 10   4 51 -105 40 25   -19 58  4                          +  1091.555
 10   4 52 -103 34 31   -17 30 57                          +  1088.477
 10   4 53 -101 32 16   -15  2  3                          +  1084.500
 10   4 54 - 99 33  0   -12 31 36                          +  1079.641
 10   4 55 - 97 36  8   - 9 59 49                          +  1073.918
 10   4 56 - 95 41  6   - 7 26 55                          +  1067.352
 10   4 57 - 93 47 18   - 4 53  4                          +  1059.968
 10   4 58 - 91 54 14   - 2 18 30                          +  1051.789
  10   4 58 53  LONG.   - 90 13 25  PASS NO.   392 +  1043.803
 10   4 59 - 90  1 19   + 0 16 39                          +  1042.844
 10   5  0 - 88  8  2   + 2 52  9                          +  1033.162
2RSTON  99 10  5  0 46.156  S89.2117   3664.154     NE
 10   5  1 - 86 13 49   + 5 27 50                          +  1022.773
 10   5  2 - 84 18  6   + 8  3 30                          +  1011.710
 10   5  3 - 82 20 18   +10 38 55                          +  1000.009
```

```
CPCAN1 107 10  5  3 51.941  S69.4387   2072.795    NE
 10  5  4 - 80 19 47  +13 13 53                     +  987.705
 10  5  5 - 78 15 56  +15 48  8                     +  974.837
BELVOR 113 10  5  5 32.075  S80.3446   2725.001    NE
PNSTAT  96 10  5  5 11.187  S84.1467   3055.785    NE
 10  5  6 - 76  8  1  +18 21 23                     +  961.443
PDRSPG 117 10  5  6 16.796  S71.8488   2144.036    NE
ABDEEN 112 10  5  6  1.553  S79.7962   2669.697    NE
FTMONM 104 10  5  6 57.047  S77.7392   2494.038    NE
 10  5  7 - 73 55 19  +20 53 21                     +  947.566
 10  5  8 - 71 37  1  +23 23 39                     +  933.248
LINCON 105 10  5  8  2.945  S77.4444   2443.835    NE
 10  5  9 - 69 12 14  +25 51 54                     +  918.534
CPCAN1 107 10  5  9 58.116  E64.3455   1707.949    NE       **
 10  5 10 - 66 40  2  +28 17 40                     +  903.468
 10  5 11 - 63 59 25  +30 40 26                     +  888.098
 10  5 12 - 61  9 18  +32 59 35                     +  872.472
ARKANS 109 10  5 12 53.664  E88.1013   3215.243    NE       **
2RSTON  99 10  5 12 44.538  E83.9285   2815.919    NE       **
 10  5 13 - 58  8 33  +35 14 28                     +  856.641
PDRSPG 117 10  5 13  0.029  E70.2683   1884.135    NE       **
 10  5 14 - 54 55 59  +37 24 19                     +  840.655
BELVOR 113 10  5 14 37.072  E79.3053   2379.330    NE       **
 10  5 15 - 51 30 26  +39 28 16                     +  824.567
ABDEEN 112 10  5 14 59.938  E79.4387   2376.678    NE       **
FTMONM 104 10  5 15 23.586  E78.5154   2297.474    NE       **
PNSTAT  96 10  5 15 40.333  E83.5085   2679.922    NE       **
 10  5 16 - 47 50 48  +41 25 18                     +  808.431
LINCON 105 10  5 16 38.609  E80.3760   2392.304    NE       **
 10  5 17 - 43 56  5  +43 14 20                     +  792.301
 10  5 18 - 39 45 32  +44 54 10                     +  776.233
 10  5 19 - 35 18 50  +46 23 30                     +  760.285
HDLBRG 101 10  5 21 45.086  W82.8473   2415.344    NE       **
 10  5 20 - 30 36  9  +47 40 57                     +  744.515
 10  5 21 - 25 38 23  +48 45 12                     +  728.979
 10  5 22 - 20 27 12  +49 34 55                     +  713.740
 10  5 23 - 15  5  9  +50  8 58                     +  698.854
 10  5 24 -  9 35 36  +50 26 27                     +  684.384  TWILIGHT
 10  5 25 -  4  2 30  +50 28 46                     +  670.389  TWILIGHT
 10  5 26 +  1 29 55  +50  9 44                     +  656.928  TWILIGHT
 10  5 27 +  6 57 29  +49 35 30                     +  644.062  TWILIGHT
HDLBRG 101 10  5 27 19.476  S 0.7617    639.498    SE
```

10	5	28	+	12	16	28	+48	44	38				+	631.848	TWILIGHT
10	5	29	+	17	23	50	+47	37	59				+	620.345	
HDLBRG	101	10		5	27	15.067		W	1.5967		627.263		SE	**	
10	5	30	+	22	17	23	+46	16	38				+	609.608	
10	5	31	+	26	55	45	+44	41	48				+	599.692	
10	5	32	+	31	18	23	+42	54	48				+	590.648	
10	5	33	+	35	25	21	+40	56	54				+	582.526	
10	5	34	+	39	17	11	+38	49	22				+	575.372	
10	5	35	+	42	54	45	+36	33	21				+	569.227	
10	5	36	+	46	19	9	+34	9	56				+	564.131	
10	5	37	+	49	31	32	+31	40	7				+	560.117	
10	5	38	+	52	33	6	+29	4	47				+	557.213	
10	5	39	+	55	25	4	+26	24	43				+	555.444	
10	5	40	+	58	8	35	+23	40	41				+	554.829	
10	5	41	+	60	44	46	+20	53	18				+	555.377	
10	5	42	+	63	14	38	+18	3	11				+	557.096	
10	5	43	+	65	39	9	+15	10	53				+	559.984	
10	5	44	+	67	59	13	+12	16	54				+	564.035	
10	5	45	+	70	15	44	+ 9	21	41				+	569.235	
10	5	46	+	72	29	29	+ 6	25	40				+	575.563	
10	5	47	+	74	41	15	+ 3	29	18				+	582.992	
10	5	48	+	76	51	46	+ 0	32	56				+	591.489	
10	5	49	+	79	1	46	- 2	23	2				+	601.015	
10	5	50	+	81	11	58	- 5	18	13				+	611.523	
10	5	51	+	83	23	5	- 8	12	17				+	622.966	
10	5	52	+	85	35	48	-11	4	50				+	635.284	
10	5	53	+	87	50	53	-13	55	30				+	648.420	
10	5	54	+	90	9	3	-16	43	56				+	662.309	
10	5	55	+	92	31	7	-19	29	41				+	676.883	
10	5	56	+	94	57	52	-22	12	23				+	692.070	
10	5	57	+	97	30	8	-24	51	34				+	707.799	
10	5	58	+100		8	50	-27	26	45				+	723.994	
10	5	59	+102	54	51		-29	57	26				+	740.578	
10	6	0	+105	49	9		-32	23	2				+	757.475	
10	6	1	+108	52	42		-34	42	57				+	774.607	
10	6	2	+112	6	26		-36	56	31				+	791.897	
10	6	3	+115	31	17		-39	2	59				+	809.268	
10	6	4	+119	8	1		-41	1	33				+	826.646	
10	6	5	+122	57	19		-42	51	21				+	843.956	
10	6	6	+126	59	34		-44	31	30				+	861.126	
10	6	7	+131	14	50		-46	1	2				+	878.087	
10	6	8	+135	42	43		-47	19	1				+	894.770	

```
 10   6   9 +140 22 19   -48 24 34                          +  911.112
 10   6  10 +145 12  7   -49 16 49                          +  927.050
 10   6  11 +150 10  0   -49 55  8                          +  942.526
 10   6  12 +155 13 20   -50 18 59                          +  957.483
 10   6  13 +160 19  4   -50 28  9                          +  971.870
 10   6  14 +165 23 59   -50 22 36                          +  985.638
 10   6  15 +170 24 54   -50  2 36                          +  998.740
 10   6  16 +175 18 54   -49 28 41                          + 1011.135
 10   6  17 -179 56 26   -48 41 33                          + 1022.786
 10   6  18 -175 23  0   -47 42  5                          + 1033.656
 10   6  19 -171  2  5   -46 31 13                          + 1043.714
 10   6  20 -166 54 22   -45 10  0                          + 1052.932
 10   6  21 -163  0  5   -43 39 25                          + 1061.285  TWILIGHT
 10   6  22 -159 19  2   -42  0 26                          + 1068.753  TWILIGHT
 10   6  23 -155 50 44   -40 13 59                          + 1075.317  TWILIGHT
 10   6  24 -152 34 28   -38 20 55                          + 1080.962  TWILIGHT
 10   6  25 -149 29 25   -36 21 59                          + 1085.678  TWILIGHT
 10   6  26 -146 34 42   -34 17 52                          + 1089.455  TWILIGHT
 10   6  27 -143 49 24   -32  9 12                          + 1092.289  TWILIGHT
 10   6  28 -141 12 35   -29 56 30                          + 1094.176  TWILIGHT
 10   6  29 -138 43 22   -27 40 16                          + 1095.118
 10   6  30 -136 20 53   -25 20 55                          + 1095.117
 10   6  31 -134  4 21   -22 58 49                          + 1094.180
 10   6  32 -131 53  0   -20 34 19                          + 1092.314
 10   6  33 -129 46  7   -18  7 42                          + 1089.532
 10   6  34 -127 43  1   -15 39 13                          + 1085.846
 10   6  35 -125 43  5   -13  9  9                          + 1081.272
 10   6  36 -123 45 42   -10 37 42                          + 1075.829
 10   6  37 -121 50 16   - 8  5  4                          + 1069.537
 10   6  38 -119 56 15   - 5 31 28                          + 1062.418
 10   6  39 -118  3  3   - 2 57  5                          + 1054.497
 10   6  40 -116 10 10   - 0 22  5                          + 1045.801
  10   6 40  8  LONG.   -115 54  4  PASS NO.   393 + 1044.457
 10   6  41 -114 17  3   + 2 13 19                          + 1036.357
 10   6  42 -112 23  9   + 4 48 57                          + 1026.197
 10   6  43 -110 27 53   + 7 24 36                          + 1015.353
 10   6  44 -108 30 41   +10  0  4                          + 1003.858
WHITES 111 10   6 44 53.202   S79.7076    2723.568     NE
 10   6  45 -106 30 57   +12 35  8                          +  991.748
BOLDER  95 10   6 45 37.429   S85.6558    3217.301     NE
 10   6  46 -104 28  2   +15  9 33                          +  979.062
 10   6  47 -102 21 15   +17 43  2                          +  965.837
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 10  6 48 -100  9 52  +20 15 18                          +  952.115
FTSILL 110 10  6 48 46.304  S63.9563   1752.145    NE
 10  6 49 - 97 53  5  +22 46  1                          +  937.937
 10  6 50 - 95 30  4  +25 14 47                          +  923.347
 10  6 51 - 92 59 53  +27 41 11                          +  908.391
ARKANS 109 10  6 51 50.813  S37.8189   1094.188    NE
CPCAN1 107 10  6 51 13.239  W59.2297   1534.115    NE        **
 10  6 52 - 90 21 32  +30  4 42                          +  893.115
UWISCN 102 10  6 52 14.832  S65.2506   1717.704    NE
UILNOS  97 10  6 52 45.978  S52.1655   1314.329    NE
 10  6 53 - 87 33 59  +32 24 47                          +  877.566
2RSTON  99 10  6 53 18.422  S12.8377    892.320    NE
WHITES 111 10  6 53 33.748  E75.9159   2222.788    NE        **
FTSILL 110 10  6 53 59.147  E63.1032   1594.194    NE        **
2RSTON  99 10  6 53 59.785  E13.9714    884.869    NE        **
 10  6 54 - 84 36  5  +34 40 47                          +  861.795
PDRSPG 117 10  6 54 15.173  W46.6526   1175.837    NE        **
ARKANS 109 10  6 54  8.849  E39.5998   1073.391    NE        **
GOLDST 103 10  6 54 19.004  E88.8028   3284.221    NE        **
 10  6 55 - 81 26 41  +36 51 57                          +  845.852
CPCAN1 107 10  6 55 15.261  N56.8153   1369.950    NE
BPOINT 126 10  6 55 44.430  W12.6083    852.105    NE        **
BELVOR 113 10  6 55 52.299  W 9.3572    841.754    NE        **
LANGLY 106 10  6 55  6.486  W29.6997    953.964    NE        **
 10  6 56 - 78  4 37  +38 57 26                          +  829.790
BPOINT 126 10  6 56 16.771  N 9.3217    835.030    NE
PDRSPG 117 10  6 56 42.932  N39.0651   1016.927    NE
BELVOR 113 10  6 56 16.009  N 6.7853    830.633    NE
ABDEEN 112 10  6 56 33.766  N 5.2227    823.742    NE
LANGLY 106 10  6 56 28.430  N23.2840    885.742    NE
PNSTAT  96 10  6 56  3.423  S14.8230    853.589    NE
ABDEEN 112 10  6 56 15.102  W 7.5257    832.074    NE        **
FTMONM 104 10  6 56 38.833  W11.6132    834.474    NE        **
UILNOS  97 10  6 56 34.178  E58.0839   1372.476    NE        **
PNSTAT  96 10  6 56 55.518  E20.1171    860.927    NE        **
BOLDER  95 10  6 56 34.837  E84.0936   2743.186    NE        **
 10  6 57 - 74 28 44  +40 56 17                          +  813.661
LINCON 105 10  6 57 46.708  S 2.1056    801.567    NE
FTMONM 104 10  6 57  7.136  N 7.8541    818.539    NE
LINCON 105 10  6 57 53.856  E 3.0203    800.154    NE        **
 10  6 58 - 70 38  0  +42 47 26                          +  797.520
UWISCN 102 10  6 58  9.511  E72.2147   1868.540    NE        **
```

10	6	59	-	66	31	37	+44	29	42				+	781.423	
10	7	0	-	62	9	7	+46	1	48				+	765.427	
10	7	1	-	57	30	33	+47	22	23				+	749.588	
10	7	2	-	52	36	36	+48	30	6				+	733.966	
10	7	3	-	47	28	43	+49	23	38				+	718.619	
10	7	4	-	42	9	16	+50	1	47				+	703.608	
10	7	5	-	36	41	23	+50	23	35				+	688.992	TWILIGHT
10	7	6	-	31	8	53	+50	28	20				+	674.831	TWILIGHT
10	7	7	-	25	35	58	+50	15	46				+	661.186	TWILIGHT
10	7	8	-	20	6	51	+49	45	55				+	648.116	TWILIGHT
10	7	9	-	14	45	25	+48	59	16				+	635.681	TWILIGHT
10	7	10	-	9	34	53	+47	56	36				+	623.938	
HDLBRG	101	10	7	8	30.356		W82.1457			3902.745			SE	**	
10	7	11	-	4	37	41	+46	38	56				+	612.944	
10	7	12	+	0	4	39	+45	7	29				+	602.754	
10	7	13	+	4	31	18	+43	23	30				+	593.420	
10	7	14	+	8	42	15	+41	28	19				+	584.993	
HDLBRG	101	10	7	13	59.987		561.6866			1091.537			SE		
10	7	15	+	12	37	53	+39	23	10				+	577.520	
10	7	16	+	16	19	1	+37	9	15				+	571.045	
10	7	17	+	19	46	42	+34	47	40				+	565.606	
10	7	18	+	23	2	3	+32	19	25				+	561.241	
10	7	19	+	26	6	18	+29	45	26				+	557.978	
10	7	20	+	29	0	37	+27	6	32				+	555.844	
10	7	21	+	31	46	13	+24	23	27				+	554.858	
10	7	22	+	34	24	12	+21	36	53				+	555.034	
10	7	23	+	36	55	36	+18	47	25				+	556.380	
10	7	24	+	39	21	25	+15	55	37				+	558.898	
10	7	25	+	41	42	35	+13	2	0				+	562.581	
10	7	26	+	43	59	57	+10	7	3				+	567.419	
10	7	27	+	46	14	21	+ 7	11	11				+	573.392	
10	7	28	+	48	26	35	+ 4	14	50				+	580.476	
10	7	29	+	50	37	22	+ 1	18	24				+	588.640	
10	7	30	+	52	47	28	- 1	37	43				+	597.846	
10	7	31	+	54	57	34	- 4	33	11				+	608.050	
10	7	32	+	57	8	24	- 7	27	36				+	619.204	
10	7	33	+	59	20	40	-10	20	37				+	631.253	
10	7	34	+	61	35	6	-13	11	51				+	644.138	
10	7	35	+	63	52	27	-16	0	55				+	657.796	
10	7	36	+	66	13	29	-18	47	27				+	672.162	
10	7	37	+	68	38	59	-21	31	1				+	687.163	
10	7	38	+	71	9	48	-24	11	11				+	702.729	

10	7	39	+	73	46	49	-26	47	29	+	718.785
10	7	40	+	76	30	56	-29	19	25	+	735.254
10	7	41	+	79	23	6	-31	46	25	+	752.060
10	7	42	+	82	24	15	-34	7	53	+	769.124
10	7	43	+	85	35	23	-36	23	11	+	786.371
10	7	44	+	88	57	23	-38	31	34	+	803.723
10	7	45	+	92	31	6	-40	32	15	+	821.105
10	7	46	+	96	17	14	-42	24	24	+	838.442
10	7	47	+100	16	16	-44	7	7	+	855.662	
10	7	48	+104	28	20	-45	39	27	+	872.694	
10	7	49	+108	53	11	-47	0	28	+	889.469	
10	7	50	+113	30	3	-48	9	15	+	905.923	
10	7	51	+118	17	32	-49	4	57	+	921.993	
10	7	52	+123	13	42	-49	46	50	+	937.618	
10	7	53	+128	16	1	-50	14	22	+	952.742	
10	7	54	+133	21	32	-50	27	14	+	967.313	
10	7	55	+138	27	3	-50	25	22	+	981.279	
10	7	56	+143	29	21	-50	8	57	+	994.595	
10	7	57	+148	25	24	-49	38	27	+	1007.217	
10	7	58	+153	12	41	-48	54	32	+	1019.106	
10	7	59	+157	49	7	-47	58	3	+	1030.225	
10	8	0	+162	13	19	-46	49	55	+	1040.543	
10	8	1	+166	24	24	-45	31	10	+	1050.030	
10	8	2	+170	22	5	-44	2	49	+	1058.660	
10	8	3	+174	6	26	-42	25	50	+	1066.412	TWILIGHT
10	8	4	+177	37	53	-40	41	9	+	1073.265	TWILIGHT
10	8	5	-179	2	53	-38	49	38	+	1079.205	TWILIGHT
10	8	6	-175	55	7	-36	52	5	+	1084.219	TWILIGHT
10	8	7	-172	57	55	-34	49	11	+	1088.298	TWILIGHT
10	8	8	-170	10	20	-32	41	35	+	1091.435	TWILIGHT
10	8	9	-167	31	28	-30	29	50	+	1093.627	TWILIGHT
10	8	10	-165	0	26	-28	14	26	+	1094.874	
10	8	11	-162	36	22	-25	55	49	+	1095.177	
10	8	12	-160	18	26	-23	34	22	+	1094.542	
10	8	13	-158	5	52	-21	10	26	+	1092.977	
10	8	14	-155	57	56	-18	44	19	+	1090.491	
10	8	15	-153	53	58	-16	16	17	+	1087.098	
10	8	16	-151	53	20	-13	46	36	+	1082.812	
10	8	17	-149	55	23	-11	15	29	+	1077.651	
10	8	18	-147	59	32	- 8	43	9	+	1071.634	
10	8	19	-146	5	12	- 6	9	48	+	1064.783	
10	8	20	-144	11	53	- 3	35	36	+	1057.122	

```
 10  8 21 -142 19  0  - 1  0 47                                  + 1048.677
  10  8 21 23  LONG.  -141 34 44  PASS NO.  394 + 1045.073
 10  8 22 -140 26  1  + 1 34 31                                  + 1039.476
 10  8 23 -138 32 23  + 4 10  4                                  + 1029.548
 10  8 24 -136 37 32  + 6 45 42                                  + 1018.925
 10  8 25 -134 40 55  + 9 21 13                                  + 1007.641
 10  8 26 -132 41 54  +11 56 22                                  +  995.730
 10  8 27 -130 39 53  +14 30 55                                  +  983.229
 10  8 28 -128 34 10  +17  4 38                                  +  970.177
 10  8 29 -126 24  3  +19 37 12                                  +  956.614
 10  8 30 -124  8 45  +22  8 17                                  +  942.580
STNFDU  98 10  8 30 50.660  S66.0628   1818.939    NE
 10  8 31 -121 47 25  +24 37 33                                  +  928.121
 10  8 32 -119 19 11  +27  4 32                                  +  913.279
NELCAL 121 10  8 32 54.030  S25.5239    983.195    NE
GOLDST 103 10  8 32 56.852  S41.6929   1148.399    NE
 10  8 33 -116 43  2  +29 28 48                                  +  898.102
 10  8 34 -113 57 58  +31 49 46                                  +  882.637
NELCAL 121 10  8 34 19.311  E25.8483    961.699    NE        **
WHITES 111 10  8 34 48.892  W30.9998    993.705    NE        **
 10  8 35 -111  2 52  +34  6 49                                  +  866.932
PDRSPG 117 10  8 35 30.420  W89.4249   3357.997    NE        **
FTSILL 110 10  8 35 14.332  W58.4503   1447.538    NE        **
ARKANS 109 10  8 35 23.993  W73.0400   2036.131    NE        **
GOLDST 103 10  8 35 34.210  E43.6074   1125.713    NE        **
2RSTON  99 10  8 35 14.950  W79.3616   2448.207    NE        **
 10  8 36 -107 56 33  +36 19 14                                 +  851.038
WHITES 111 10  8 36 22.083  N27.1103    935.280    NE
BOLDER  95 10  8 36 49.069  S17.4682    871.676    NE
STNFDU  98 10  8 36 30.900  E67.0418   1713.495    NE        **
 10  8 37 -104 37 52  +38 26 12                                 +  835.007
BELVOR 113 10  8 37  7.567  W82.2870   2616.821    NE        **
ABDEEN 112 10  8 37 30.391  W81.8171   2565.437    NE        **
FTMONM 104 10  8 37 54.060  W82.2661   2589.136    NE        **
UILNOS  97 10  8 37 49.342  W61.3990   1472.107    NE        **
BOLDER  95 10  8 37 50.084  E22.7775    880.457    NE        **
 10  8 38 -101  5 39  +40 26 48                                 +  818.892
FTSILL 110 10  8 38 42.880  N49.8366   1165.585    NE
PNSTAT  96 10  8 38 10.745  W76.6865   2168.969    NE        **
 10  8 39 - 97 18 51  +42 19 58                                 +  802.746
LINCON 105 10  8 39  9.124  W79.3454   2320.353    NE        **
UWISCN 102 10  8 39 24.862  W35.3153    949.389    NE        **
```

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ARKANS 109 10  8 40 35.311  N61.6507   1408.311    NE
UWISCN 102 10  8 40 50.246  N20.6395    819.558    NE
 10  8 41 - 88 58 18  +45 39 22                          +  770.586
2RSTON  99 10  8 41 30.538  N66.9589   1569.867    NE
UILNOS  97 10  8 41  9.877  N44.4761   1025.112    NE
 10  8 42 - 84 23 53  +47  3  0                          +  754.686
CPCAN1 107 10  8 42 47.230  N82.3178   2422.879    NE
 10  8 43 - 79 33 50  +48 14  7                          +  738.983
PORSPG 117 10  8 43 47.874  N72.7511   1764.858    NE
BELVOR 113 10  8 43 28.964  N63.1925   1382.283    NE
ABDEEN 112 10  8 43 41.385  N61.4530   1323.322    NE
PNSTAT  96 10  8 43 20.168  N55.1544   1169.482    NE
 10  8 44 - 74 29 26  +49 11 22                          +  723.536
LINCON 105 10  8 44 34.161  N52.4845   1087.328    NE
FTMONM 104 10  8 44  5.178  N60.1647   1276.664    NE
 10  8 45 - 69 12 46  +49 53 33                          +  708.405
 10  8 46 - 63 46 48  +50 19 36                          +  693.649  TWILIGHT
 10  8 47 - 58 15 10  +50 28 46                          +  679.330  TWILIGHT
 10  8 48 - 52 42  2  +50 20 39                          +  665.507  TWILIGHT
 10  8 49 - 47 11 39  +49 55 13                          +  652.240  TWILIGHT
 10  8 50 - 41 47 58  +49 12 50                          +  639.588  TWILIGHT
 10  8 51 - 36 34 26  +48 14 13                          +  627.612
 10  8 52 - 31 33 41  +47  0 19                          +  616.365
 10  8 53 - 26 47 29  +45 32 18                          +  605.906
 10  8 54 - 22 16 47  +43 51 27                          +  596.288
 10  8 55 - 18  1 51  +41 59  3                          +  587.561
 10  8 56 - 14  2 22  +39 56 22                          +  579.773
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 10  8 58 -  6 46 34  +35 24 56                          +  567.193
 10  8 59 -  3 28 10  +32 58 20                          +  562.479
 10  9  0 -  0 21 11  +30 25 46                          +  558.859
 10  9  1 +  2 35 36  +27 48  3                          +  556.361
 10  9  2 +  5 23 21  +25  6  0                          +  555.006
 10  9  3 +  8  3 11  +22 20 16                          +  554.811
 10  9  4 + 10 36 12  +19 31 29                          +  555.784
 10  9  5 + 13  3 23  +16 40 14                          +  557.929
 10  9  6 + 15 25 40  +13 47  2                          +  561.243
 10  9  7 + 17 43 57  +10 52 21                          +  565.716
 10  9  8 + 19 59  4  + 7 56 40                          +  571.333
 10  9  9 + 22 11 48  + 5  0 23                          +  578.069
 10  9 10 + 24 22 55  + 2  3 55                          +  585.895
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10	9	11	+	26	33	8	-	0	52	21	+ 594.777
10	9	12	+	28	43	12	-	3	48	3	+ 604.671
10	9	13	+	30	53	48	-	6	42	49	+ 615.531
10	9	14	+	33	5	40	-	9	36	16	+ 627.304
10	9	15	+	35	19	30	-12	28		2	+ 639.933
10	9	16	+	37	36	4	-15	17		44	+ 653.355
10	9	17	+	39	56	7	-18	5		0	+ 667.505
10	9	18	+	42	20	27	-20	49		24	+ 682.313
10	9	19	+	44	49	52	-23	30		32	+ 697.709
10	9	20	+	47	25	15	-26	7		55	+ 713.618
10	9	21	+	50	7	31	-28	41		3	+ 729.964
10	9	22	+	52	57	36	-31	9		25	+ 746.671
10	9	23	+	55	56	25	-33	32		24	+ 763.661
10	9	24	+	59	4	59	-35	49		22	+ 780.857
10	9	25	+	62	24	12	-37	59		37	+ 798.183
10	9	26	+	65	54	57	-40	2		23	+ 815.562
10	9	27	+	69	37	57	-41	56		49	+ 832.918
10	9	28	+	73	33	45	-43	42		3	+ 850.181
10	9	29	+	77	42	37	-45	17		8	+ 867.276
10	9	30	+	82	4	23	-46	41		7	+ 884.138
10	9	31	+	86	38	23	-47	53		6	+ 900.697
10	9	32	+	91	23	27	-48	52		11	+ 916.892
10	9	33	+	96	17	45	-49	37		38	+ 932.661
10	9	34	+101	18	52		-50	8		49	+ 947.948
10	9	35	+106	23	59		-50	25		24	+ 962.696
10	9	36	+111	29	53		-50	27		13	+ 976.856
10	9	37	+116	33	21		-50	14		24	+ 990.381
10	9	38	+121	31	19		-49	47		22	+ 1003.225
10	9	39	+126	21	4		-49	6		44	+ 1015.349
10	9	40	+131	0	27		-48	13		18	+ 1026.714
10	9	41	+135	27	51		-47	7		58	+ 1037.289
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10	9	49	+163	28	12		-33	13		43	+ 1090.484 TWILIGHT
10	9	50	+166	9	9		-31	2		56	+ 1092.980 TWILIGHT
10	9	51	+168	42	3		-28	48		24	+ 1094.532 TWILIGHT
10	9	52	+171	7	47		-26	30		32	+ 1095.139

```
 10  9 53 +173 27 10  -24  9 45                          + 1094.807
 10  9 54 +175 41  0  -21 46 25                          + 1093.543
 10  9 55 +177 50  0  -19 20 49                          + 1091.354
 10  9 56 +179 54 52  -16 53 15                          + 1088.255
 10  9 57 -178  3 43  -14 23 58                          + 1084.258
SAMOAI 114 10  9 57  1.472  W41.8100   1378.355     NE        **
 10  9 58 -176  5 10  -11 53 12                          + 1079.380
 10  9 59 -174  8 51  - 9 21 10                          + 1073.641
 10 10  0 -172 14 14  - 6 48  4                          + 1067.061
SAMOAI 114 10 10  0 48.126  N52.1522   1561.025     NE
 10 10  1 -170 20 44  - 4 14  5                          + 1059.663
 10 10  2 -168 27 48  - 1 39 25                          + 1051.472
  10 10  2 38  LONG.  -167 15 26  PASS NO.  395 + 1045.732
 10 10  3 -166 34 55  + 0 55 45                          + 1042.517
 10 10  4 -164 41 31  + 3 31 14                          + 1032.824
 10 10  5 -162 47  3  + 6  6 50                          + 1022.427
 10 10  6 -160 50 58  + 8 42 21                          + 1011.356
BSANDS 100 10 10  6 32.280  S60.8849   1739.286     NE
 10 10  7 -158 52 39  +11 17 35                          +  999.647
 10 10  8 -156 51 28  +13 52 16                          +  987.337
 10 10  9 -154 46 47  +16 26 11                          +  974.461
 10 10 10 -152 37 52  +18 59  1                          +  961.062
 10 10 11 -150 23 59  +21 30 28                          +  947.178
BSANDS 100 10 10 11 12.370  E53.8118   1441.729     NE        **
 10 10 12 -148  4 18  +24  0 11                          +  932.854
 10 10 13 -145 37 57  +26 27 45                          +  918.132
 10 10 14 -143  3 57  +28 52 42                          +  903.060
 10 10 15 -140 21 17  +31 14 30                          +  887.682
 10 10 16 -137 28 52  +33 32 34                          +  872.049
WHITES 111 10 10 16  4.098  W86.7873   3107.553     NE        **
GOLDST 103 10 10 16 49.416  W71.4646   1946.824     NE        **
 10 10 17 -134 25 34  +35 46 12                          +  856.210
STNFDU  98 10 10 17 46.044  W51.5156   1249.174     NE        **
 10 10 18 -131 10 11  +37 54 35                          +  840.216
 10 10 19 -127 41 35  +39 56 51                          +  824.120
BOLDER  95 10 10 19  5.310  W76.3040   2155.100     NE        **
 10 10 20 -123 58 39  +41 51 59                          +  807.976
STNFDU  98 10 10 20 27.852  N40.5062   1012.771     NE
UWISCN 102 10 10 20 40.129  W85.4082   2816.843     NE        **
 10 10 21 -120  0 28  +43 38 51                          +  791.838
GOLDST 103 10 10 21 44.894  N59.9039   1358.705     NE
 10 10 22 -115 46 23  +45 16 14                          +  775.762
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WHITES 111 10 10 23 56.915  N73.1157   1819.027    NE
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BOLDER  95 10 10 24 15.166  N56.2708   1202.395    NE
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ARKANS 109 10 10 27  0.867  N76.3441   1907.756    NE
UWISCN 102 10 10 27 12.836  N54.2674   1093.838    NE
2RSTON  99 10 10 27 45.609  N77.5498   1959.902    NE
UILNOS  97 10 10 27 28.635  N65.3144   1384.326    NE
 10 10 28 - 85 21 18  +50 28  3                          +  683.883  TWILIGHT
CPCAN1 107 10 10 28 51.239  N86.7543   2660.654    SE
 10 10 29 - 79 48 14  +50 24 23                          +  669.888  TWILIGHT
PDRSPG 117 10 10 29 46.342  N76.8047   1854.508    SE
BELVOR 113 10 10 29 28.771  N69.7095   1501.712    SE
ABDEEN 112 10 10 29 40.245  N67.6080   1412.974    SE
PNSTAT  96 10 10 29 20.778  N63.9209   1292.661    SE
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LINCON 105 10 10 30 30.466  N55.6863   1056.158    SE
FTMONM 104 10 10 30  2.616  N65.0416   1313.307    SE
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 10 10 32 - 63 34 48  +48 30 48                          +  631.363  TWILIGHT
 10 10 33 - 58 30 37  +47 20 45                          +  619.870
 10 10 34 - 53 40 36  +45 56 16                          +  609.148
 10 10 35 - 49  5 54  +44 18 37                          +  599.249
LINCON 105 10 10 35 55.812  E85.1604   2322.538    SE        **
 10 10 36 - 44 46 58  +42 29  6                          +  590.227
 10 10 37 - 40 43 34  +40 28 58                          +  582.129
 10 10 38 - 36 55  7  +38 19 28                          +  575.003
 10 10 39 - 33 20 40  +36  1 44                          +  568.891
 10 10 40 - 29 59  8  +33 36 50                          +  563.830
 10 10 41 - 26 49 20  +31  5 44                          +  559.856
 10 10 42 - 23 50  1  +28 29 17                          +  556.996
 10 10 43 - 21  0  3  +25 48 17                          +  555.273
 10 10 44 - 18 18 16  +23  3 26                          +  554.706
 10 10 45 - 15 43 35  +20 15 23                          +  555.306
 10 10 46 - 13 14 59  +17 24 43                          +  557.078
 10 10 47 - 10 51 30  +14 31 57                          +  560.022
 10 10 48 -  8 32 15  +11 37 36                          +  564.129
 10 10 49 -  6 16 23  + 8 42  7                          +  569.386
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 10 10 50 -  4  3  6  + 5 45 56                          +  575.771
 10 10 51 -  1 51 37  + 2 49 27                          +  583.256
SANANA 116 10 10 51 51.128  N 3.7105    591.622    SE
SANANA 116 10 10 51 57.494  E 2.6370    592.016    SE        **
 10 10 52 +  0 18 48  - 0  6 56                          +  591.809
 10 10 53 +  2 28 51  - 3  2 51                          +  601.389
 10 10 54 +  4 39 16  - 5 57 55                          +  611.950
 10 10 55 +  6 50 47  - 8 51 47                          +  623.441
 10 10 56 +  9  4  5  -11 44  3                          +  635.807
 10 10 57 + 11 19 54  -14 34 22                          +  648.986
 10 10 58 + 13 39  1  -17 22 20                          +  662.914
 10 10 59 + 16  2 12  -20  7 33                          +  677.522
 10 11  0 + 18 30 17  -22 49 37                          +  692.741
 10 11  1 + 21  4  7  -25 28  2                          +  708.495
JOBURG 118 10 11  1 12.791  W47.5253    995.454    SE        **
 10 11  2 + 23 44 35  -28  2 21                          +  724.711
 10 11  3 + 26 32 38  -30 32  2                          +  741.311
JOBURG 118 10 11  3 34.782  S45.6999   1019.282    SE
 10 11  4 + 29 29 11  -32 56 30                          +  758.219
 10 11  5 + 32 35 14  -35 15  7                          +  775.358
 10 11  6 + 35 51 44  -37 27 11                          +  792.649
 10 11  7 + 39 19 31  -39 31 58                          +  810.017
 10 11  8 + 42 59 26  -41 28 38                          +  827.387
 10 11  9 + 46 52  2  -43 16 19                          +  844.684
 10 11 10 + 50 57 41  -44 54  5                          +  861.838
 10 11 11 + 55 16 18  -46 21  0                          +  878.778
 10 11 12 + 59 47 24  -47 36  7                          +  895.437
 10 11 13 + 64 29 55  -48 38 33                          +  911.751
 10 11 14 + 69 22 10  -49 27 31                          +  927.659
 10 11 15 + 74 21 56  -50  2 21                          +  943.101
 10 11 16 + 79 26 24  -50 22 37                          +  958.022
 10 11 17 + 84 32 30  -50 28  8                          +  972.372
 10 11 18 + 89 36 58  -50 18 58                          +  986.100
 10 11 19 + 94 36 40  -49 55 27                          +  999.162
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 10 11 31 +139 49 15  -31 35 48                          + 1092.236  TWILIGHT
OOMERA 119 10 11 31 13.258  E20.5153   1154.848    NE          **
 10 11 32 +142 24  5  -29 22  9                          + 1094.091  TWILIGHT
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 10 11 34 +147 12 25  -24 44 52                          + 1094.974
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 10 11 42 +163 30 25  - 4 52 30                          + 1062.119
 10 11 43 +165 23 24  - 2 18  1                          + 1054.185
  10 11 43 53  LONG.  +167  3 50  PASS NO.  396 + 1046.433
 10 11 44 +167 16 14  + 0 17  1                          + 1045.478
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 10 11 46 +171  3 32  + 5 27 58                          + 1025.855
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 10 11 54 -171 56 11  +25 50 49                          +  922.947
 10 11 55 -169 24 15  +28 16 26                          +  907.984
 10 11 56 -166 43 56  +30 39  3                          +  892.701
 10 11 57 -163 59  9  +32 58  4                          +  877.145
 10 11 58 -160 53 46  +35 12 51                          +  861.366
BSANDS 100 10 11 58 20.999  N69.6519   1850.990    NE
 10 11 59 -157 41 37  +37 22 36                          +  845.415
 10 12  0 -154 14 33  +39 26 28                          +  829.345
 10 12  1 -150 37 26  +41 23 29                          +  813.207
 10 12  2 -146 43 17  +43 12 31                          +  797.059
 10 12  3 -142 33 21  +44 52 24                          +  780.953
 10 12  4 -138  7 19  +46 21 50                          +  764.949
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 10 12  6 -128 28 13  +48 43 55                          +  733.474
 10 12  7 -123 17 40  +49 33 55                          +  718.123
STNFDU  98 10 12  7 12.689  N69.8149   1602.797    NE
 10 12  8 -117 56 14  +50  8 19                          +  703.107
GOLDST 103 10 12  8 11.809  N75.5895   1865.223    NE
 10 12  9 -112 27 12  +50 26 12                          +  688.489  TWILIGHT
 10 12 10 -106 54 30  +50 26 59                          +  674.328  TWILIGHT
WHITES 111 10 12 10  1.645  N79.4817   2060.068    SE
BOLDER  95 10 12 10 17.857  N66.0651   1370.669    SE
 10 12 11 -101 22 22  +50 10 26                          +  660.685  TWILIGHT
FTSILL 110 10 12 11 32.282  N77.5592   1888.503    SE
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ARKANS 109 10 12 12 57.955  N75.3957   1722.186    SE
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UWISCN 102 10 12 13 10.480  N48.1981    900.788    SE
2RSTON  99 10 12 13 45.622  N74.6668   1662.777    SE
UILNOS  97 10 12 13 27.289  N60.7139   1141.357    SE
 10 12 14 - 85 28 27  +47 40 12                          +  623.458
CPCAN1 107 10 12 14 59.574  N82.9469   2181.125    SE
 10 12 15 - 80 34 42  +46 19 21                          +  612.477
BPOINT 126 10 12 15 44.583  N55.6965    988.068    SE
BELVOR 113 10 12 15 44.027  N54.4860    964.904    SE
ABDEEN 112 10 12 15 57.994  N48.4105    862.734    SE
PNSTAT  96 10 12 15 34.449  N43.9583    810.482    SE
 10 12 16 - 75 56  3  +44 44 59                          +  602.303
PDRSPG 117 10 12 16  5.348  N65.7221   1238.593    SE
FTMONM 104 10 12 16 25.514  N37.9191    739.502    SE
UWISCN 102 10 12 16 56.434  E75.2846   1627.421    SE        **
 10 12 17 - 71 33  4  +42 58 25                          +  592.990
LINCON 105 10 12 17  0.636  N 3.7841    594.071    SE
LINCON 105 10 12 17 11.266  E 6.3921    594.714    SE        **
 10 12 18 - 67 25 45  +41  0 55                          +  584.587
ABDEEN 112 10 12 18 43.818  E65.2184   1182.782    SE        **
FTMONM 104 10 12 18 21.757  E53.9174    920.230    SE        **
UILNOS  97 10 12 18 26.062  E82.5122   2074.944    SE        **
PNSTAT  96 10 12 18  6.101  E62.7633   1118.863    SE        **
 10 12 19 - 63 33 33  +38 53 45                          +  577.142
BELVOR 113 10 12 19  5.139  E70.9260   1384.616    SE        **
 10 12 20 - 59 55 37  +36 38  3                          +  570.697
PDRSPG 117 10 12 20 34.952  E78.5170   1759.372    SE        **
 10 12 21 - 56 30 52  +34 14 55                          +  565.294
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10	12	23	-	50	16	15	+29	10	12	+	557.747
10	12	24	-	47	24	0	+26	30	19	+	555.657
10	12	25	-	44	40	12	+23	46	24	+	554.720
10	12	26	-	42	3	47	+20	59	7	+	554.947
10	12	27	-	39	33	42	+18	9	4	+	556.347
10	12	28	-	37	8	58	+15	16	47	+	558.919
10	12	29	-	34	48	42	+12	22	47	+	562.658
10	12	30	-	32	32	2	+ 9	27	32	+	567.553
10	12	31	-	30	18	7	+ 6	31	28	+	573.583
10	12	32	-	28	6	14	+ 3	35	0	+	580.725
10	12	33	-	25	55	35	+ 0	38	31	+	588.944
10	12	34	-	23	45	29	- 2	17	35	+	598.205
10	12	35	-	21	35	12	- 5	12	56	+	608.462
10	12	36	-	19	24	1	- 8	7	10	+	619.666
10	12	37	-	17	11	13	-10	59	55	+	631.762
10	12	38	-	14	56	5	-13	50	49	+	644.692
10	12	39	-	12	37	51	-16	39	28	+	658.390
10	12	40	-	10	15	44	-19	25	29	+	672.792
10	12	41	-	7	48	56	-22	8	26	+	687.826
10	12	42	-	5	16	37	-24	47	52	+	703.419
10	12	43	-	2	37	53	-27	23	20	+	719.497
10	12	44	+	0	8	11	-29	54	18	+	735.984
10	12	45	+	3	2	33	-32	20	12	+	752.802
10	12	46	+	6	6	9	-34	40	24	+	769.874
10	12	47	+	9	19	57	-36	54	15	+	787.124
10	12	48	+	12	44	52	-39	1	0	+	804.474
10	12	49	+	16	21	42	-40	59	51	+	821.849
10	12	50	+	20	11	8	-42	49	55	+	839.175
10	12	51	+	24	13	32	-44	30	19	+	856.379
10	12	52	+	28	28	59	-46	0	6	+	873.391
10	12	53	+	32	57	6	-47	18	19	+	890.144
10	12	54	+	37	36	57	-48	24	3	+	906.571
10	12	55	+	42	27	2	-49	16	29	+	922.610
10	12	56	+	47	25	14	-49	54	56	+	938.203
10	12	57	+	52	28	54	-50	18	55	+	953.293
10	12	58	+	57	34	59	-50	28	9	+	967.826
10	12	59	+	62	40	15	-50	22	38	+	981.754
10	13	0	+	67	41	30	-50	2	40	+	995.029
10	13	1	+	72	35	50	-49	28	44	+	1007.610
10	13	2	+	77	20	47	-48	41	34	+	1019.457
10	13	3	+	81	54	27	-47	42	2	+	1030.535

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PONAPE 115 10 13 27 48.988  W59.8192   1727.292    NE          **
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 10 13 51 -134  0 44  +50 28 26                          +  678.825  TWILIGHT
 10 13 52 -128 28  7  +50 16 19                          +  665.003  TWILIGHT
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STNFDU  98 10 13 53  8.973  N71.7659   1566.216    SE
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GOLDST 103 10 13 54  8.691  N74.7924   1690.631    SE
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WHITES 111 10 13 56  9.239  N73.9792   1601.973    SE
BOLDER  95 10 13 56 28.169  N51.2076    914.126    SE
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FTSILL 110 10 13 57 58.889  N64.2530   1183.022    SE
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LINCON 105 10 13 58 26.698  W83.7707   2203.829    SE        **
UWISCN 102 10 13 58 11.928  W51.1319    890.984    SE        **
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ARKANS 109 10 13 59 51.217  N45.8415    799.153    SE
ABDEEN 112 10 13 59 59.333  W71.0881   1397.330    SE        **
FTMONM 104 10 13 59 37.230  W76.4381   1667.629    SE        **
UILNOS  97 10 13 59 41.618  W27.1317    646.299    SE        **
PNSTAT  96 10 13 59 21.534  W71.6266   1429.539    SE        **
BOLDER  95 10 13 59 40.897  E70.0625   1356.162    SE        **
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UWISCN 102 10 14  0  8.377  S40.3450    736.842    SE
2RSTON  99 10 14  0 57.465  N29.3776    649.013    SE
UILNOS  97 10 14  0 31.633  S21.0943    613.013    SE
BELVOR 113 10 14  0 20.592  W66.3501   1215.067    SE        **
 10 14  1 - 86 31 25  +37 13 52                          +  572.612
PORSPG 117 10 14  1 50.426  W56.8429    953.864    SE        **
ARKANS 109 10 14  1 56.338  E54.6785    911.945    SE        **
 10 14  2 - 83  3 23  +34 52 34                          +  566.869
CPCAN1 107 10 14  2 44.726  N47.0543    791.105    SE
WHITES 111 10 14  2 28.576  E87.5918   2488.399    SE        **
FTSILL 110 10 14  2  5.278  E75.7772   1595.888    SE        **
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BELVOR 113 10 14  3 51.550  S64.7172    1130.983     SE
PNSTAT  96 10 14  3 37.028  S69.2170    1281.976     SE
 10 14  4 - 76 43  8  +29 50 48                       +   558.614
PDRSPG 117 10 14  4 24.200  S56.6374     933.511     SE
ABDEEN 112 10 14  4 12.891  S69.8870    1304.612     SE
FTMONM 104 10 14  4 55.202  S76.0157    1585.107     SE
CPCAN1 107 10 14  4 36.766  E48.7739     804.988     SE          **
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LINCON 105 10 14  5 49.832  S83.7768    2110.900     SE
 10 14  6 - 71  2 37  +24 29  8                      +   554.853
 10 14  7 - 68 24 24  +21 42 40                      +   554.707
 10 14  8 - 65 52 46  +18 53 16                      +   555.734
PANTIG 120 10 14  8 36.501  W28.7354     627.661     SE          **
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PANTIG 120 10 14  9 42.089  S34.6227     668.027     SE
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 10 14 11 - 58 47 51  +10 12 54                      +   565.834
 10 14 12 - 56 33 17  + 7 16 59                      +   571.507
 10 14 13 - 54 20 56  + 4 20 34                      +   578.301
 10 14 14 - 52 10  1  + 1 24  2                      +   586.184
 10 14 15 - 49 59 49  - 1 32 14                      +   595.120
 10 14 16 - 47 49 37  - 4 27 51                      +   605.068
 10 14 17 - 45 38 42  - 7 22 27                      +   615.979
 10 14 18 - 43 26 22  -10 15 39                      +   627.801
 10 14 19 - 41 11 52  -13  7  6                      +   640.475
 10 14 20 - 38 54 28  -15 56 24                      +   653.938
 10 14 21 - 36 33 23  -18 43 10                      +   668.125
 10 14 22 - 34  7 49  -21 27  0                      +   682.968
 10 14 23 - 31 36 58  -24  7 26                      +   698.392
 10 14 24 - 28 59 54  -26 44  0                      +   714.324
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 10 14 28 - 17 11  9  -36 20 50                      +   781.610
 10 14 29 - 13 49  4  -38 29 30                      +   798.935
 10 14 30 - 10 15 15  -40 30 28                      +   816.308
 10 14 31 -  6 28 59  -42 22 54                      +   833.656
 10 14 32 -  2 29 49  -44  5 52                      +   850.903
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 10 14 34 +  6  7 29  -46 59 42  238                 +   884.820
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10 14 39	+ 30 37 22	-50 27 13		+ 963.222	
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10 14 43	+ 50 29 49	-48 54 33		+ 1015.713	
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10 14 45	+ 59 30 56	-46 49 49		+ 1037.570	
10 14 46	+ 63 42 13	-45 31 0		+ 1047.280	
10 14 47	+ 67 40 2	-44 2 33		+ 1056.143	
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10 14 56	+ 94 41 51	-25 54 56		+ 1095.016	
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10 15 4	+111 12 34	- 6 9 9		+ 1066.772	
10 15 5	+113 5 50	- 3 35 2		+ 1059.360	
10 15 6	+114 58 38	- 1 0 18		+ 1051.158	
10 15 6 23	LONG.	+115 42 32	PASS NO. 398	+ 1047.671	
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TOKAWA 108 10 15 20 19.853  E52.0480   1291.833    NE              **
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 10 15 31 -166 38  2  +50 19  9                                  +   697.850  TWILIGHT
 10 15 32 -161  6 52  +50 28 44                                  +   683.376  TWILIGHT
 10 15 33 -155 34  5  +50 21  5                                  +   669.381  TWILIGHT
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 10 15 35 -144 40 18  +49 14 16                                  +   643.070  TWILIGHT
 10 15 36 -139 26 42  +48 16  9                                  +   630.872  TWILIGHT
 10 15 37 -134 25 48  +47  2 46                                  +   619.391
 10 15 38 -129 39 21  +45 35 14                                  +   608.683
 10 15 39 -125  8 22  +43 54 50                                  +   598.803
STNFDU  98 10 15 39 41.533  N48.1687    845.255    SE
 10 15 40 -120 53  5  +42  2 51                                  +   589.802
NELCAL 121 10 15 40 58.513  N59.8750   1042.266    SE
UILNOS  97 10 15 40 57.030  W88.3388   2608.801    SE              **
BOLDER  95 10 15 40 56.412  W65.8416   1205.106    SE              **
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GOLDST 103 10 15 41  0.346  N44.8444    787.535    SE
 10 15 42 -113  8  6  +37 49  9                                  +   574.634
STNFDU  98 10 15 42 10.137  E61.0859   1057.901    SE              **
 10 15 43 -109 36 43  +35 29 45                                  +   568.554
WHITES 111 10 15 43 51.692  S 3.9377    565.381    SE
WHITES 111 10 15 43 44.111  W 4.2752    566.197    SE              **
FTSILL 110 10 15 43 20.855  W63.6174   1113.406    SE              **
ARKANS 109 10 15 43 11.812  W79.3757   1815.252    SE              **
GOLDST 103 10 15 43  2.460  E54.0117    900.280    SE              **
2RSTON  99 10 15 43 20.216  W83.8506   2149.143    SE              **
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BOLDER  95 10 15 44 19.790  S62.5746   1073.607   SE
 10 15 45 -103 10 40  +30 31  4                                  +  559.597
CPCAN1 107 10 15 45 52.260  W83.6895   2111.654   SE                    **
 10 15 46 -100 13 35  +27 53 33                                  +  556.780
FTSILL 110 10 15 46 38.444  S64.8335   1128.079   SE
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 10 15 49 - 92 12 13  +19 37 19                                  -  555.239
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 10 15 51 - 87 22 20  +13 52 55                                  -  560.065
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 10 15 53 - 82 48 37  + 8  2 29                                  +  560.544
CPCAN1 107 10 15 53 59.703  S89.5604   2715.676   SE
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QUITOE 125 10 15 54 55.136  N32.5951    676.229   SE
 10 15 55 - 78 24 30  + 2  9 34                                  +  583.929
QUITOE 125 10 15 55 56.563  E24.8439    642.268   SE                    **
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 10 15 57 - 74  4  1  - 3 42 41                                  +  [illegible]
 10 15 58 - 71 53 19  - 6 37 37                                  +  [illegible]
 10 15 59 - 69 41 23  - 9 31 15                                  -  [illegible]
 10 16  0 - 67 27 28  -12 23 13                                  +  [illegible]
 10 16  1 - 65 10 51  -15 13  9                                  +  [illegible]
 10 16  2 - 62 50 45  -18  0 39                                  +  [illegible]
 10 16  3 - 60 26 23  -20 45 19                                  +  [illegible]
 10 16  4 - 57 56 55  -23 26 42                                  -  [illegible]
 10 16  5 - 55 21 29  -26  4 21                                  +  [illegible]
 10 16  6 - 52 39 11  -28 37 46                                  +  [illegible]
 10 16  7 - 49 49  4  -31  6 25                                  +  [illegible]
 10 16  8 - 46 50 11  -33 23 42                                  +  [illegible]
 10 16  9 - 43 41 34  -35 40 57                                  +  [illegible]
 10 16 10 - 40 22 16  -37 57 20                                  +  [illegible]
 10 16 11 - 36 51 26  -40  0 32                                  +  [illegible]
 10 16 12 - 33  8 19  -41 55 15                                  +  [illegible]
 10 16 13 - 29 12 22  -43 40 44                                  +  [illegible]
 10 16 14 - 25  3 21  -45 16  4                                  +  [illegible]
 10 16 15 - 20 41 23  -46 40 18                                  +  879.467
 10 16 16 - 16  7  8  -47 52 30                                  +  896.102
 10 16 17 - 11 21 48  -48 51 46                                  +  912.388
```

10	16	18	-	6	27	12	-49	37	22			+ 928.264	
10	16	19	-	1	25	44	-50	8	42			+ 943.673	
10	16	20	+	3	39	43	-50	25	22			+ 958.559	
10	16	21	+	8	45	59	-50	27	14			+ 972.871	
10	16	22	+	13	49	48	-50	14	28			+ 986.560	
10	16	23	+	18	48	5	-49	47	26			+ 999.581	
10	16	24	+	23	38	9	-49	6	46			+ 1011.894	
10	16	25	+	28	17	48	-48	13	17			+ 1023.461	
10	16	26	+	32	45	26	-47	7	53			+ 1034.246	
10	16	27	+	37	0	6	-45	51	36			+ 1044.220	
10	16	28	+	41	1	20	-44	25	27			+ 1053.354	
10	16	29	+	44	49	8	-42	50	25			+ 1061.625	TWILIGHT
10	16	30	+	48	23	53	-41	7	27			+ 1069.012	TWILIGHT
10	16	31	+	51	46	9	-39	17	28			+ 1075.497	TWILIGHT
10	16	32	+	54	56	46	-37	21	15			+ 1081.067	TWILIGHT
10	16	33	+	57	56	33	-35	19	32			+ 1085.709	TWILIGHT
10	16	34	+	60	46	28	-33	12	58			+ 1089.416	TWILIGHT
10	16	35	+	63	27	25	-31	2	8			+ 1092.183	TWILIGHT
10	16	36	+	66	0	18	-28	47	33			+ 1094.007	TWILIGHT
10	16	37	+	68	26	1	-26	29	39			+ 1094.889	
10	16	38	+	70	45	22	-24	8	51			+ 1094.833	
10	16	39	+	72	59	10	-21	45	30			+ 1093.844	
10	16	40	+	75	8	7	-19	19	54			+ 1091.930	
10	16	41	+	77	12	56	-16	52	21			+ 1089.104	
10	16	42	+	79	14	17	-14	23	6			+ 1085.377	
10	16	43	+	81	12	48	-11	52	23			+ 1080.767	
10	16	44	+	83	9	2	- 9	20	24			+ 1075.290	
10	16	45	+	85	3	35	- 6	47	22			+ 1068.968	
10	16	46	+	86	57	1	- 4	13	28			+ 1061.821	
10	16	47	+	88	49	51	- 1	38	54			+ 1053.875	
10	16	47	38	LONG.			+ 90	1	50	PASS NO.	399	+ 1048.312	
10	16	48	+	90	42	40	+ 0	56	9			+ 1045.156	
10	16	49	+	92	35	58	+ 3	31	31			+ 1035.693	
10	16	50	+	94	30	19	+ 6	7	0			+ 1025.514	
10	16	51	+	96	26	18	+ 8	42	23			+ 1014.653	
10	16	52	+	98	24	30	+11	17	28			+ 1003.143	
10	16	53	+100	25	33		+13	52	0			+ 991.018	
10	16	54	+102	30	5		+16	25	46			+ 978.317	
10	16	55	+104	38	49		+18	58	27			+ 965.079	
10	16	56	+106	52	31		+21	29	44			+ 951.342	
10	16	57	+109	11	59		+23	59	17			+ 937.151	
10	16	58	+111	38	7		+26	26	42			+ 922.547	

```
 10 16 59 +114 11 51   +28 51 30                          +  907.576
 10 17  0 +116 54 12   +31 13 10                          +  892.285
 10 17  1 +119 46 17   +33 31  6                          +  876.720
TOKAWA 108 10 17  1 34.997  W67.3011    1767.143     NE         **
 10 17  2 +122 49 13   +35 44 36                          +  860.933
 10 17  3 +126  4 10   +37 52 54                          +  844.974
 10 17  4 +129 32 18   +39 55  7                          +  828.895
 10 17  5 +133 14 42   +41 50 13                          +  812.749
 10 17  6 +137 12 19   +43 37  5                          +  796.591
TOKAWA 108 10 17  6  2.150  N57.0903    1308.847     NE
 10 17  7 +141 25 47   +45 14 32                          +  780.478
 10 17  8 +145 55 22   +46 41 13                          +  764.466
 10 17  9 +150 40 45   +47 55 48                          +  748.612
 10 17 10 +155 40 54   +48 56 56                          +  732.977
 10 17 11 +160 53 56   +49 43 21                          +  717.620
 10 17 12 +166 17 11   +50 13 58                          +  702.601
 10 17 13 +171 47  9   +50 27 55                          +  687.980  TWILIGHT
 10 17 14 +177 19 50   +50 24 42                          +  673.819  TWILIGHT
 10 17 15 -177  9  0   +50  4 11                          +  660.178  TWILIGHT
 10 17 16 -171 43 26   +49 26 37                          +  647.117  TWILIGHT
 10 17 17 -166 27  3   +48 32 36                          +  634.696  TWILIGHT
 10 17 18 -161 22 44   +47 23  3                          +  622.973
 10 17 19 -156 32 30   +45 59  4                          +  612.005
 10 17 20 -151 57 32   +44 21 52                          +  601.849
 10 17 21 -147 38 15   +42 32 46                          +  592.557
 10 17 22 -143 34 30   +40 33  2                          +  584.178
 10 17 23 -139 45 41   +38 23 53                          +  576.761
STNFDU  98 10 17 23 25.652  W75.2882    1585.603     SE         **
 10 17 24 -136 10 53   +36  6 28                          +  570.349
WHITES 111 10 17 24 59.606  W88.3357    2565.715     SE         **
GOLDST 103 10 17 24 17.975  W79.4278    1819.070     SE         **
 10 17 25 -132 49  1   +33 41 51                          +  564.982
 10 17 26 -129 38 52   +31 10 58                          +  560.694
 10 17 27 -126 39 16   +28 34 43                          +  557.517
 10 17 28 -123 49  1   +25 53 53                          +  555.474
STNFDU  98 10 17 28 36.373  S76.7236    1620.673     SE
 10 17 29 -121  6 58   +23  9  9                          +  554.586
 10 17 30 -118 32  3   +20 21 11                          +  554.864
GOLDST 103 10 17 30 40.299  S82.7884    2029.323     SE
 10 17 31 -116  3 13   +17 30 34                          +  556.317
 10 17 32 -113 39 33   +14 37 50                          +  558.945
 10 17 33 -111 20  8   +11 43 28                          +  562.741
```

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 10  17  34 -109   4   6   + 8 47 57                          +   567.693
 10  17  35 -106  50  40   + 5 51 42                          +   573.782
 10  17  36 -104  39   3   + 2 55  7                          +   580.980
 10  17  37 -102  28  32   - 0  1 23                          +   589.256
 10  17  38 -100  18  23   - 2 57 27                          +   598.572
 10  17  39  - 98   7  52   - 5 52 41                          +   608.881
 10  17  40  - 95  56  17   - 8 46 43                          +   620.136
 10  17  41  - 93  42  55   -11 39 11                          +   632.279
 10  17  42  - 91  27   2   -14 29 43                          +   645.252
 10  17  43  - 89   7  52   -17 17 56                          +   658.991
 10  17  44  - 86  44  38   -20  3 24                          +   673.429
 10  17  45  - 84  16  30   -22 45 43                          +   688.493
 10  17  46  - 81  42  38   -25 24 25                          +   704.114
 10  17  47  - 79   2   8   -27 59  0                          +   720.213
 10  17  48  - 76  14   3   -30 28 58                          +   736.717
 10  17  49  - 73  17  26   -32 53 43                          +   753.547
SNTAGO 122 10 17 49 50.711   S15.4179     792.687     SE
SNTAGO 122 10 17 49  6.279   W17.7568     788.137     SE          **
 10  17  50  - 70  11  19   -35 12 37                          +   770.627
 10  17  51  - 66  54  46   -37 24 59                          +   787.879
 10  17  52  - 63  26  53   -39 30  3                          +   805.226
 10  17  53  - 59  46  52   -41 26 59                          +   822.594
 10  17  54  - 55  54   8   -43 14 56                          +   839.908
 10  17  55  - 51  48  20   -44 52 58                          +   857.096
 10  17  56  - 47  29  31   -46 20  7                          +   874.088
 10  17  57  - 42  58  11   -47 35 28                          +   890.817
 10  17  58  - 38  15  25   -48 38  5                          +   907.217
 10  17  59  - 33  22  51   -49 27 13                          +   923.226
 10  18   0  - 28  22  46   -50  2 11                          +   938.786
 10  18   1  - 23  17  57   -50 22 34                          +   953.841
 10  18   2  - 18  11  29   -50 28  9                          +   968.337
 10  18   3  - 13   6  40   -50 19  2                          +   982.225
 10  18   4  -  8   6  38   -49 55 31                          +   995.461
 10  18   5  -  3  14  13   -49 18 11                          +  1008.001
 10  18   6  +  1  28  17   -48 27 48                          +  1019.806
 10  18   7  +  5  59   6   -47 25 17                          +  1030.842
 10  18   8  + 10  17   7   -46 11 36                          +  1041.075
 10  18   9  + 14  21  46   -44 47 48                          +  1050.478
 10  18  10  + 18  12  56   -43 14 52                          +  1059.026
 10  18  11  + 21  50  55   -41 33 47                          +  1066.696  TWILIGHT
 10  18  12  + 25  16  16   -39 45 27                          +  1073.470  TWILIGHT
JOBURG 118 10 18 12 54.989   S59.2734    1792.301     NE
```

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 10 18 13 + 28 29 43  -37 50 42                        + 1079.334  TWILIGHT
 10 18 14 + 31 32  9  -35 50 16                        + 1084.274  TWILIGHT
 10 18 15 + 34 24 27  -33 44 51                        + 1088.281  TWILIGHT
 10 18 16 + 37  7 33  -31 35  1                        + 1091.351  TWILIGHT
 10 18 17 + 39 42 22  -29 21 18                        + 1093.479  TWILIGHT
 10 18 18 + 42  9 47  -27  4 11                        + 1094.665
 10 18 19 + 44 30 38  -24 44  4                        + 1094.911
 10 18 20 + 46 45 44  -22 21 19                        + 1094.223
 10 18 21 + 48 55 49  -19 56 16                        + 1092.609
 10 18 22 + 51  1 36  -17 29 11                        + 1090.078
 10 18 23 + 53  3 46  -15  0 20                        + 1086.643
 10 18 24 + 55  2 54  -12 29 58                        + 1082.319
 10 18 25 + 56 59 38  - 9 58 18                        + 1077.123
 10 18 26 + 58 54 33  - 7 25 32                        + 1071.075
 10 18 27 + 60 48 11  - 4 51 51                        + 1064.196
 10 18 28 + 62 41  6  - 2 17 27                        + 1056.510
  10 18 28 53  LONG.  + 64 21  7  PASS NO.  400 + 1048.996
 10 18 29 + 64 33 50  + 0 17 29                        + 1048.042
 10 18 30 + 66 26 57  + 2 52 45                        + 1038.819
 10 18 31 + 68 20 58  + 5 28 11                        + 1028.872
 10 18 32 + 70 16 27  + 8  3 35                        + 1018.232
 10 18 33 + 72 14  1  +10 38 44                        + 1006.931
 10 18 34 + 74 14 15  +13 13 23                        +  995.005
 10 18 35 + 76 17 49  +15 47 20                        +  982.490
 10 18 36 + 78 25 24  +18 20 16                        +  969.423
 10 18 37 + 80 37 44  +20 51 54                        +  955.846
 10 18 38 + 82 55 38  +23 21 53                        +  941.799
 10 18 39 + 85 19 57  +25 49 50                        +  927.325
 10 18 40 + 87 51 38  +28 15 17                        +  912.468
 10 18 41 + 90 31 40  +30 37 45                        +  897.276
 10 18 42 + 93 21  8  +32 56 39                        +  881.795
 10 18 43 + 96 21  9  +35 11 18                        +  866.073
 10 18 44 + 99 32 53  +37 20 58                        +  850.163
 10 18 45 +102 57 30  +39 24 46                        +  834.115
 10 18 46 +106 36  6  +41 21 44                        +  817.982
 10 18 47 +110 29 42  +43 10 47                        +  801.819
 10 18 48 +114 39  1  +44 50 42                        +  785.682
 10 18 49 +119  4 25  +46 20 14                        +  769.626
 10 18 50 +123 45 45  +47 38  0                        +  753.711
 10 18 51 +128 42 10  +48 42 40                        +  737.994
 10 18 52 +133 52  4  +49 32 57                        +  722.536
TOKAWA 108 10 18 52 39.242  N75.7707   1903.170    NE
```

```
 10 18 53 +139 12 54   +50  7 41                          +  707.396
 10 18 54 +144 41 25   +50 25 57                          +  692.635  TWILIGHT
 10 18 55 +150 13 42   +50 27 10                          +  678.313  TWILIGHT
 10 18 56 +155 45 34   +50 11  5                          +  664.492  TWILIGHT
 10 18 57 +161 12 52   +49 37 52                          +  651.233  TWILIGHT
 10 18 58 +166 31 51   +48 48  1                          +  638.594  TWILIGHT
 10 18 59 +171 39 25   +47 42 23                          +  626.635
 10 19  0 +176 33 22   +46 22  0                          +  615.414
 10 19  1 -178 47 42   +44 48  7                          +  604.987
 10 19  2 -174 24 25   +43  1 59                          +  595.408
 10 19  3 -170 16 45   +41  4 53                          +  586.727
 10 19  4 -166 24 12   +38 58  4                          +  578.994
 10 19  5 -162 45 54   +36 42 41                          +  572.252
BSANDS 100 10 19  5 51.844  N75.1547   1562.445    SE
 10 19  6 -159 20 49   +34 19 51                          +  566.544
 10 19  7 -156  7 46   +31 50 31                          +  561.906
 10 19  8 -153  5 34   +29 15 35                          +  558.370
 10 19  9 -150 13  1   +26 35 51                          +  555.962
 10 19 10 -147 28 58   +23 52  4                          +  554.703
BSANDS 100 10 19 10 39.431  E76.4358   1605.677    SE          **
 10 19 11 -144 52 17   +21  4 53                          +  554.609
 10 19 12 -142 21 59   +18 14 54                          +  555.688
 10 19 13 -139 57  4   +15 22 39                          +  557.943
 10 19 14 -137 36 37   +12 28 39                          +  561.370
 10 19 15 -135 19 46   + 9 33 22                          +  565.957
 10 19 16 -133  5 43   + 6 37 15                          +  571.689
 10 19 17 -130 53 42   + 3 40 41                          +  578.540
 10 19 18 -128 42 57   + 0 44  6                          +  586.480
 10 19 19 -126 32 44   - 2 12  8                          +  595.471
 10 19 20 -124 22 21   - 5  7 39                          +  605.473
 10 19 21 -122 11  5   - 8  2  4                          +  616.435
 10 19 22 -119 58 14   -10 55  1                          +  628.304
 10 19 23 -117 43  2   -13 46  7                          +  641.023
 10 19 24 -115 24 44   -16 35  0                          +  654.528
 10 19 25 -113  2 34   -19 21 15                          +  668.752
 10 19 26 -110 35 45   -22  4 28                          +  683.627
 10 19 27 -108  3 23   -24 44 11                          +  699.080
 10 19 28 -105 24 36   -27 19 55                          +  715.036
 10 19 29 -102 38 30   -29 51  9                          +  731.419
 10 19 30 - 99 44  5   -32 17 20                          +  748.154
 10 19 31 - 96 40 27   -34 37 50                          +  765.162
 10 19 32 - 93 26 34   -36 51 58                          +  782.366
```

```
 10 19 33 - 90  1 34   -38 59  0                          +  799.689
 10 19 34 - 86 24 38   -40 58  8                          +  817.056
 10 19 35 - 82 35  5   -42 48 29                          +  834.393
 10 19 36 - 78 32 31   -44 29  8                          +  851.626
 10 19 37 - 74 16 53   -45 59 10                          +  868.684
 10 19 38 - 69 48 34   -47 17 36                          +  885.501
 10 19 39 - 65  8 26   -48 23 32                          +  902.009
 10 19 40 - 60 18  4   -49 16  9                          +  918.145
 10 19 41 - 55 19 33   -49 54 45                          +  933.851
 10 19 42 - 50 15 32   -50 18 50                          +  949.068
 10 19 43 - 45  9  6   -50 28  9                          +  963.744
 10 19 44 - 40  3 28   -50 22 41                          +  977.827
 10 19 45 - 35  1 53   -50  2 44                          +  991.272
 10 19 46 - 30  7 14   -49 28 47                          + 1004.035
 10 19 47 - 25 22  0   -48 41 34                          + 1016.075
 10 19 48 - 20 48  5   -47 41 59                          + 1027.357
 10 19 49 - 16 26 44   -46 30 59                          + 1037.847
 10 19 50 - 12 18 40   -45  9 36                          + 1047.516
 10 19 51 -  8 24  6   -43 38 50                          + 1056.337
 10 19 52 -  4 42 51   -41 59 40                          + 1064.289  TWILIGHT
 10 19 53 -  1 14 23   -40 13  3                          + 1071.351  TWILIGHT
 10 19 54 +  2  2  0   -38 19 48                          + 1077.506  TWILIGHT
 10 19 55 +  5  7  6   -36 20 42                          + 1082.743  TWILIGHT
 10 19 56 +  8  1 51   -34 16 27                          + 1087.050  TWILIGHT
 10 19 57 + 10 47 10   -32  7 39                          + 1090.422  TWILIGHT
 10 19 58 + 13 23 58   -29 54 51                          + 1092.853  TWILIGHT
 10 19 59 + 15 53  9   -27 38 32                          + 1094.343  TWILIGHT
JOBURG 118 10 19 59 41.494  W51.6425   1592.400    NE          **
 10 20  0 + 18 15 34   -25 19  8                          + 1094.892
 10 20  1 + 20 32  1   -22 57  0                          + 1094.506
 10 20  2 + 22 43 17   -20 32 29                          + 1093.191
 10 20  3 + 24 50  4   -18  5 53                          + 1090.957
 10 20  4 + 26 53  3   -15 37 28                          + 1087.815
JOBURG 118 10 20  4 40.391  N59.4509   1807.439    NE
 10 20  5 + 28 52 52   -13  7 28                          + 1083.779
 10 20  6 + 30 50  8   -10 36  7                          + 1078.866
 10 20  7 + 32 45 26   - 8  3 37                          + 1073.094
 10 20  8 + 34 39 19   - 5 30 10                          + 1066.485
 10 20  9 + 36 32 21   - 2 55 57                          + 1059.060
 10 20 10 + 38 25  4   - 0 21 10                          + 1050.846
  10 20 10  8  LONG.   + 38 40 29  PASS NO.  401 + 1049.620
 10 20 11 + 40 18  0   + 2 14  1                          + 1041.868
```

```
 10 20 12 + 42 11 43   + 4 49 24                          + 1032.156
 10 20 13 + 44  6 46   + 7 24 47                          + 1021.740
 10 20 14 + 46  3 43   + 9 59 59                          + 1010.653
 10 20 15 + 48  3 12   +12 34 45                          +  998.928
 10 20 16 + 50  5 49   +15  8 52                          +  986.602
 10 20 17 + 52 12 18   +17 42  2                          +  973.713
 10 20 18 + 54 23 20   +20 13 59                          +  960.299
 10 20 19 + 56 39 43   +22 44 23                          +  946.401
 10 20 20 + 59  2 17   +25 12 50                          +  932.062
 10 20 21 + 61 31 58   +27 38 55                          +  917.325
 10 20 22 + 64  9 45   +30  2  9                          +  902.237
 10 20 23 + 66 56 41   +32 21 58                          +  886.844
 10 20 24 + 69 53 52   +34 37 43                          +  871.194
 10 20 25 + 73  2 27   +36 48 40                          +  855.338
 10 20 26 + 76 23 38   +38 54  0                          +  839.327
 10 20 27 + 79 58 32   +40 52 46                          +  823.213
 10 20 28 + 83 48 10   +42 43 54                          +  807.051
 10 20 29 + 87 53 20   +44 26 13                          +  790.896
 10 20 30 + 92 14 33   +45 58 30                          +  774.804
 10 20 31 + 96 51 48   +47 19 22                          +  758.833
 10 20 32 +101 44 24   +48 27 29                          +  743.041
 10 20 33 +106 50 57   +49 21 32                          +  727.488
 10 20 34 +112  9 10   +50  0 20                          +  712.233
 10 20 35 +117 35 59   +50 22 53                          +  697.338  TWILIGHT
 10 20 36 +123  7 37   +50 28 30                          +  682.863  TWILIGHT
 10 20 37 +128 39 55   +50 16 52                          +  668.868  TWILIGHT
 10 20 38 +134  8 41   +49 48  1                          +  655.416  TWILIGHT
TOKAWA 108 10 20 38 35.711   N76.4715    1809.482     SE
 10 20 39 +139 30  2   +49  2 23                          +  642.566  TWILIGHT
 10 20 40 +144 40 43   +48  0 43                          +  630.377  TWILIGHT
 10 20 41 +149 38 17   +46 44  3                          +  618.908
 10 20 42 +154 21  6   +45 13 32                          +  608.215
 10 20 43 +158 48 23   +43 30 26                          +  598.353
 10 20 44 +163  0  1   +41 36  4                          +  589.375
 10 20 45 +166 56 22   +39 31 40                          +  581.329
 10 20 46 +170 38 14   +37 18 24                          +  574.263
 10 20 47 +174  6 36   +34 57 24                          +  568.218
 10 20 48 +177 22 37   +32 29 40                          +  563.232
 10 20 49 -179 32 30   +29 56  7                          +  559.339
 10 20 50 -176 37 35   +27 17 34                          +  556.567
 10 20 51 -173 51 26   +24 34 46                          +  554.939
BSANDS 100 10 20 51 54.967   W71.6048    1368.418     SE        **
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```
 10 20 52 -171 12 58  +21 48 24                          +  554.472
 10 20 53 -168 41  6  +18 59  5                          +  555.178
 10 20 54 -166 14 52  +16  7 21                          +  557.059
 10 20 55 -163 53 20  +13 13 45                          +  560.115
 10 20 56 -161 35 37  +10 18 45                          +  564.336
BSANDS 100 10 20 56 47.952  S77.8598   1718.010     SE
 10 20 57 -159 20 55  + 7 22 47                          +  569.708
 10 20 58 -157  8 26  + 4 26 16                          +  576.208
 10 20 59 -154 57 23  + 1 29 38                          +  583.808
 10 21  0 -152 47  5  - 1 26 46                          +  592.472
 10 21  1 -150 36 48  - 4 22 32                          +  602.160
 10 21  2 -148 25 48  - 7 17 18                          +  612.825
 10 21  3 -146 13 23  -10 10 41                          +  624.415
 10 21  4 -143 58 50  -13  2 21                          +  636.873
 10 21  5 -141 41 22  -15 51 53                          +  650.137
 10 21  6 -139 20 14  -18 38 53                          +  664.142
 10 21  7 -136 54 38  -21 22 58                          +  678.819
 10 21  8 -134 23 44  -24  3 39                          +  694.097
 10 21  9 -131 46 38  -26 40 30                          +  709.902
 10 21 10 -129  2 26  -29 12 59                          +  726.158
 10 21 11 -126 10 11  -31 40 34                          +  742.789
 10 21 12 -123  8 55  -34  2 37                          +  759.717
 10 21 13 -119 57 41  -36 18 29                          +  776.866
 10 21 14 -116 35 32  -38 27 26                          +  794.158
 10 21 15 -113  1 37  -40 28 41                          +  811.517
 10 21 16 -109 15 14  -42 21 23                          +  828.869
 10 21 17 -105 15 55  -44  4 37                          +  846.140
 10 21 18 -101  3 30  -45 37 27                          +  863.258
 10 21 19 - 96 38 13  -46 58 56                          +  880.156
 10 21 20 - 92  0 52  -48  8  8                          +  896.765
 10 21 21 - 87 12 49  -49  4 12                          +  913.023
 10 21 22 - 82 16  1  -49 46 23                          +  928.868
 10 21 23 - 77 13  1  -50 14 10                          +  944.243
 10 21 24 - 72  6 48  -50 27 12                          +  959.092
 10 21 25 - 67  0 35  -50 25 26                          +  973.366
 10 21 26 - 61 57 36  -50  9  4                          +  987.016
 10 21 27 - 57  0 53  -49 38 33                          +  999.997
 10 21 28 - 52 13  2  -48 54 35                          + 1012.269
 10 21 29 - 47 36  4  -47 57 59                          + 1023.793
 10 21 30 - 43 11 25  -46 49 43                          + 1034.537
 10 21 31 - 38 59 58  -45 30 49                          + 1044.468
 10 21 32 - 35  1 59  -44  2 16                          + 1053.561
```

```
 10 21 33 - 31 17 24   -42 25  6                          + 1061.791  TWILIGHT
 10 21 34 - 27 45 46   -40 40 14                          + 1069.138  TWILIGHT
 10 21 35 - 24 26 27   -38 48 33                          + 1075.585  TWILIGHT
 10 21 36 - 21 18 36   -36 50 50                          + 1081.117  TWILIGHT
 10 21 37 - 18 21 21   -34 47 47                          + 1085.723  TWILIGHT
 10 21 38 - 15 33 45   -32 40  3                          + 1089.395  TWILIGHT
 10 21 39 - 12 54 55   -30 28 12                          + 1092.129  TWILIGHT
 10 21 40 - 10 23 55   -28 12 42                          + 1093.922  TWILIGHT
 10 21 41 -  7 59 53   -25 54  1                          + 1094.775
 10 21 42 -  5 42  2   -23 32 32                          + 1094.692
 10 21 43 -  3 29 32   -21  8 35                          + 1093.677
 10 21 44 -  1 21 42   -18 42 29                          + 1091.740
SANANA 116 10 21 44 39.215  S70.7580   2311.995    NE
 10 21 45 +  0 42  9   -16 14 30                          + 1088.892
 10 21 46 +  2 42 41   -13 44 53                          + 1085.145
 10 21 47 +  4 40 31   -11 13 51                          + 1080.517
 10 21 48 +  6 36 15   - 8 41 38                          + 1075.024
 10 21 49 +  8 30 25   - 6  8 25                          + 1068.686
 10 21 50 + 10 23 35   - 3 34 24                          + 1061.526
 10 21 51 + 12 16 19   - 0 59 46                          + 1053.568
SANANA 116 10 21 51 22.983  E62.7479   1878.494    NE        **
  10 21 51 23  LONG.  + 12 59 49  PASS NO.  402 + 1050.201
 10 21 52 + 14  9  7   + 1 35 19                          + 1044.838
 10 21 53 + 16  2 34   + 4 10 38                          + 1035.364
 10 21 54 + 17 57 12   + 6 46  1                          + 1025.176
 10 21 55 + 19 53 36   + 9 21 14                          + 1014.305
 10 21 56 + 21 52 21   +11 56  6                          + 1002.786
 10 21 57 + 23 54  6   +14 30 22                          +  990.654
 10 21 58 + 25 59 30   +17  3 45                          +  977.946
 10 21 59 + 28  9 17   +19 36  0                          +  964.700
 10 22  0 + 30 24 12   +22  6 47                          +  950.956
 10 22  1 + 32 45  6   +24 35 43                          +  936.756
 10 22  2 + 35 12 52   +27  2 24                          +  922.145
 10 22  3 + 37 48 28   +29 26 21                          +  907.166
 10 22  4 + 40 32 55   +31 47  2                          +  891.866
 10 22  5 + 43 27 20   +34  3 50                          +  876.293
 10 22  6 + 46 32 52   +36 16  3                          +  860.498
 10 22  7 + 49 50 42   +38 22 51                          +  844.529
 10 22  8 + 53 21 57   +40 23 20                          +  828.441
 10 22  9 + 57  7 40   +42 16 28                          +  812.286
 10 22 10 + 61  8 46   +44  1  7                          +  796.119
 10 22 11 + 65 25 48   +45 36  2                          +  779.996
```

```
 10 22 12 + 69 58 54   +46 59 55                          +   763.976
 10 22 13 + 74 47 35   +48 11 23                          +   748.115
 10 22 14 + 79 50 40   +49  9  8                          +   732.473
 10 22 15 + 85  6  5   +49 51 55                          +   717.110
 10 22 16 + 90 30 57   +50 18 42                          +   702.087
 10 22 17 + 96  1 38   +50 28 42                          +   687.465  TWILIGHT
 10 22 18 +101 34  4   +50 21 30                          +   673.303  TWILIGHT
 10 22 19 +107  4  3   +49 57  3                          +   659.665  TWILIGHT
 10 22 20 +112 27 34   +49 15 40                          +   646.608  TWILIGHT
 10 22 21 +117 41 11   +48 18  3                          +   634.195  TWILIGHT
 10 22 22 +122 42 15   +47  5  9                          +   622.483
 10 22 23 +127 28 55   +45 38  6                          +   611.530
 10 22 24 +132  0 11   +43 58  9                          +   601.392
 10 22 25 +136 15 47   +42  6 34                          +   592.121
TOKAWA 108 10 22 25 15.996  N56.3790     978.570     SE
 10 22 26 +140 15 59   +40  4 39                          +   583.768
 10 22 27 +144  1 28   +37 53 36                          +   576.380
 10 22 28 +147 33 12   +35 34 30                          +   570.001
TOKAWA 108 10 22 28 18.342  E66.7251    1211.280     SE        **
 10 22 29 +150 52 16   +33  8 26                          +   564.670
 10 22 30 +153 59 54   +30 36 18                          +   560.423
 10 22 31 +156 57 17   +27 58 59                          +   557.289
 10 22 32 +159 45 35   +25 17 13                          +   555.294
 10 22 33 +162 25 56   +22 31 43                          +   554.455
 10 22 34 +164 59 25   +19 43  6                          +   554.786
 10 22 35 +167 27  1   +16 51 56                          +   556.294
 10 22 36 +169 49 41   +13 58 46                          +   558.978
 10 22 37 +172  8 19   +11  4  3                          +   562.831
 10 22 38 +174 23 44   + 8  8 17                          +   567.841
 10 22 39 +176 36 44   + 5 11 51                          +   573.987
 10 22 40 +178 48  6   + 2 15 11                          +   581.244
 10 22 41 -179  1 28   - 0 41 20                          +   589.576
 10 22 42 -176 51 13   - 3 37 19                          +   598.946
 10 22 43 -174 40 26   - 6 32 25                          +   609.308
 10 22 44 -172 28 26   - 9 26 14                          +   620.613
SAMOAI 114 10 22 44 47.235  N27.2452     700.477     SE
 10 22 45 -170 14 27   -12 18 25                          +   632.803
SAMOAI 114 10 22 45 42.503  E21.1897     683.839     SE        **
 10 22 46 -167 57 46   -15  8 34                          +   645.820
 10 22 47 -165 37 37   -17 56 18                          +   659.599
 10 22 48 -163 13 13   -20 41 13                          +   674.071
 10 22 49 -160 43 43   -23 22 52                          +   689.167
```

10	22	50	-158	8	14	-26	0	47	+	704.813	
10	22	51	-155	25	53	-28	34	29	+	720.935	
10	22	52	-152	35	44	-31	3	25	+	737.455	
10	22	53	-149	36	48	-33	26	58	+	754.296	
10	22	54	-146	28	7	-35	44	31	+	771.382	
10	22	55	-143	8	45	-37	55	21	+	788.636	
10	22	56	-139	37	50	-39	58	41	+	805.980	
10	22	57	-135	54	36	-41	53	40	+	823.339	
10	22	58	-131	58	31	-43	39	25	+	840.641	
10	22	59	-127	49	19	-45	15	1	+	857.812	
10	23	0	-123	27	9	-46	39	29	+	874.784	
10	23	1	-118	52	40	-47	51	53	+	891.488	
10	23	2	-114	7	3	-48	51	21	+	907.861	
10	23	3	-109	12	9	-49	37	6	+	923.840	
10	23	4	-104	10	21	-50	8	34	+	939.367	
10	23	5	- 99	4	33	-50	25	19	+	954.386	
10	23	6	- 93	57	56	-50	27	16	+	968.844	
10	23	7	- 88	53	46	-50	14	31	+	982.694	
10	23	8	- 83	55	9	-49	47	29	+	995.889	
10	23	9	- 79	4	46	-49	6	48	+	1008.388	
10	23	10	- 74	24	51	-48	13	16	+	1020.151	
10	23	11	- 69	56	58	-47	7	48	+	1031.145	
10	23	12	- 65	42	7	-45	51	26	+	1041.337	
10	23	13	- 61	40	44	-44	25	12	+	1050.698	
10	23	14	- 57	52	48	-42	50	4	+	1059.205	
10	23	15	- 54	17	57	-41	7	1	+	1066.835	TWILIGHT
10	23	16	- 50	55	37	-39	16	56	+	1073.570	TWILIGHT
10	23	17	- 47	44	58	-37	20	38	+	1079.396	TWILIGHT
10	23	18	- 44	45	8	-35	18	50	+	1084.299	TWILIGHT
10	23	19	- 41	55	13	-33	12	12	+	1088.272	TWILIGHT
10	23	20	- 39	14	16	-31	1	18	+	1091.308	TWILIGHT
10	23	21	- 36	41	24	-28	46	40	+	1093.404	TWILIGHT
10	23	22	- 34	15	43	-26	28	44	+	1094.561	
10	23	23	- 31	56	23	-24	7	55	+	1094.779	
10	23	24	- 29	42	38	-21	44	33	+	1094.066	
10	23	25	- 27	33	44	-19	18	57	+	1092.427	
10	23	26	- 25	28	57	-16	51	25	+	1089.874	
10	23	27	- 23	27	39	-14	22	11	+	1086.418	
10	23	28	- 21	29	12	-11	51	30	+	1082.076	
10	23	29	- 19	33	2	- 9	19	35	+	1076.862	
10	23	30	- 17	38	32	- 6	46	37	+	1070.799	
10	23	31	- 15	45	11	- 4	12	48	+	1063.906	

```
 10 23 32 - 13 52 25  - 1 38 19                                  + 1056.207
SANANA 116 10 23 32 37.983  W61.9416   1848.730    NE          **
  10 23 32 38  LONG.   - 12 40 52  PASS NO.  403 + 1050.824
 10 23 33 - 11 59 42  + 0 56 38                                  + 1047.727
 10 23 34 - 10  6 30  + 3 31 53                                  + 1038.494
 10 23 35 -  8 12 14  + 6  7 14                                  + 1028.538
 10 23 36 -  6 16 22  + 8 42 30                                  + 1017.888
 10 23 37 -  4 18 17  +11 17 26                                  + 1006.579
 10 23 38 -  2 17 23  +13 51 50                                  +  994.644
 10 23 39 -  0 12 59  +16 25 26                                  +  982.121
SANANA 116 10 23 39  5.972  N72.2223   2204.784    NE
 10 23 40 +  1 55 36  +18 57 57                                  +  969.047
 10 23 41 +  4  9  6  +21 29  5                                  +  955.462
 10 23 42 +  6 28 23  +23 58 29                                  +  941.407
HDLBRG 101 10 23 42 55.366  S83.2347   2887.327    NE
 10 23 43 +  8 54 17  +26 25 44                                  +  926.925
 10 23 44 + 11 27 45  +28 50 23                                  +  912.061
 10 23 45 + 14  9 49  +31 11 54                                  +  896.860
 10 23 46 + 17  1 34  +33 29 42                                  +  881.369
 10 23 47 + 20  4  8  +35 43  6                                  +  865.640
 10 23 48 + 23 18 40  +37 51 19                                  +  849.720
 10 23 49 + 26 46 20  +39 53 27                                  +  833.662
 10 23 50 + 30 28 13  +41 48 31                                  +  817.520
 10 23 51 + 34 25 16  +43 35 24                                  +  801.348
 10 23 52 + 38 38  8  +45 12 53                                  +  785.201
 10 23 53 + 43  7  4  +46 39 40                                  +  769.137
 10 23 54 + 47 51 47  +47 54 25                                  +  753.214
 10 23 55 + 52 51 16  +48 55 46                                  +  737.491
 10 23 56 + 58  3 41  +49 42 28                                  +  722.026
 10 23 57 + 63 26 21  +50 13 25                                  +  706.881
 10 23 58 + 68 55 49  +50 27 46                                  +  692.117  TWILIGHT
 10 23 59 + 74 28  7  +50 25  0                                  +  677.795  TWILIGHT
 11  0  0 + 79 59  2  +50  4 57                                  +  663.976  TWILIGHT
 11  0  1 + 85 24 29  +49 27 53                                  +  650.721  TWILIGHT
 11  0  2 + 90 40 52  +48 34 22                                  +  638.089  TWILIGHT
 11  0  3 + 95 45 18  +47 25 18                                  +  626.140
 11  0  4 +100 35 44  +46  1 48                                  +  614.932
 11  0  5 +105 10 59  +44 25  4                                  +  604.522
 11  0  6 +109 30 34  +42 36 23                                  +  594.963
 11  0  7 +113 34 39  +40 37  2                                  +  586.307
 11  0  8 +117 23 49  +38 28 14                                  +  578.602
 11  0  9 +120 58 58  +36 11  8                                  +  571.892
```

```
TOKAWA  108  11   0   9 33.877   W73.6090     1489.114      SE          **
 11   0  10 +124  21  10   +33  46  47                      +   566.220
 11   0  11 +127  31  38   +31  16   9                      +   561.621
 11   0  12 +130  31  32   +28  40   6                      +   558.128
 11   0  13 +133  22   4   +25  59  25                      +   555.766
 11   0  14 +136   4  22   +23  14  49                      +   554.557
TOKAWA  109  11   0  14 29.519   576.2822     1595.152      SE
 11   0  15 +138  39  32   +20  26  57                      +   554.514
 11   0  16 +141   8  34   +17  36  23                      +   555.648
 11   0  17 +142  32  25   +14  43  40                      +   557.956
 11   0  18 +143  52   2   +11  49  18                      +   561.442
 11   0  19 +144   9  12   +  8  53  45                      +   566.068
 11   0  20 +145  21  47   +  5  57  26                      +   571.878
 11   0  21 +145  33  31   +  3   0  46                      +   578.786
 11   0  22 +145  44   9   +  0   4   9                      +   586.783
 11   0  23 +145  54  24   -  2  52   3                      +   595.821
 11   0  24 +145  63   5   -  5  47  26                      +   605.865
 11   0  25 +145  16  39   -  8  41  39                      +   616.893
 11   0  26 +145  30   5   -11  34  20                      +   628.878
 11   0  27 +145  46   1   -14  25   5                      +   641.579
 11   0  28 +145   3  15   -17  13  31                      +   655.125
 11   0  29 +170  28  31   -19  59  14                      +   669.386
 11   0  30 +172  56  42   -22  41  48                      +   684.293
 11   0  31 +175  30  36   -25  20  46                      +   699.773
 11   0  32 +178  11   9   -27  55  39                      +   715.752
 11   0  33 -179   0  43   -30  25  53                      +   732.153
 11   0  34 -176   4   3   -32  50  55                      +   748.900
 11   0  35 -173  57  53   -35  10   7                      +   765.916
 11   0  36 -169  41  17   -37  22  46                      +   783.123
 11   0  37 -165  15  18   -39  28   6                      +   800.444
 11   0  38 -160  33  11   -41  25  20                      +   817.805
 11   0  39 -155  40  19   -43  13  33                      +   835.130
 11   0  40 -154  34  21   -44  51  50                      +   852.348
 11   0  41 -150  15  21   -46  19  14                      +   869.387
 11   0  42 -145  43  48   -47  34  48                      +   886.180
 11   0  43 -141   0  45   -48  37  37                      +   902.661
 11   0  44 -136   7  53   -49  26  55                      +   918.768
 11   0  45 -131   7  29   -50   2   1                      +   934.441
 11   0  46 -126   2  18   -50  22  30                      +   949.624
 11   0  47 -120  55  29   -50  28  10                      +   964.263
 11   0  48 -115  50  19   -50  19   5                      +   978.308
 11   0  49 -110  49  57   -49  55  34                      +   991.713
```

```
 11   0 50 -105 57 12   -49 18 13                          + 1004.434
 11   0 51 -101 14 26   -48 27 48                          + 1016.433
 11   0 52 - 96 43 22   -47 25 13                          + 1027.673
 11   0 53 - 92 25  8   -46 11 28                          + 1038.121
 11   0 54 - 88 20 20   -44 47 34                          + 1047.749
 11   0 55 - 84 29  1   -43 14 33                          + 1056.529
 11   0 56 - 80 50 56   -41 33 22                          + 1064.440  TWILIGHT
 11   0 57 - 77 25 30   -39 44 56                          + 1071.463  TWILIGHT
 11   0 58 - 74 12  0   -37 50  6                          + 1077.580  TWILIGHT
 11   0 59 - 71  9 32   -35 49 35                          + 1082.780  TWILIGHT
AGASTA 123 11  0 59 17.963  S57.9947    1759.253     NE
SNTAGO 122 11  0 59  9.765  S15.6861    1118.349     NE
 11   1  0 - 68 17 14   -33 44  5                         + 1087.052  TWILIGHT
SNTAGO 122 11  1  0 16.177  E17.5610    1132.307     NE         **
 11   1  1 - 65 34  8   -31 34 11                         + 1090.389  TWILIGHT
 11   1  2 - 62 59 20   -29 20 26                         + 1092.788  TWILIGHT
 11   1  3 - 60 31 56   -27  3 16                         + 1094.248  TWILIGHT
 11   1  4 - 58 11  6   -24 43  8                         + 1094.770
AGASTA 123 11  1  4 27.633  E59.1781    1814.925     NE         **
 11   1  5 - 55 56  2   -22 20 22                         + 1094.357
 11   1  6 - 53 45 59   -19 55 18                         + 1093.018
 11   1  7 - 51 40 16   -17 28 13                         + 1090.760
 11   1  8 - 49 38  9   -14 59 24                         + 1087.598
 11   1  9 - 47 39  4   -12 29  4                         + 1083.542
 11   1 10 - 45 42 24   - 9 57 27                         + 1078.612
 11   1 11 - 43 47 33   - 7 24 44                         + 1072.824
 11   1 12 - 41 53 59   - 4 51  8                         + 1066.200
 11   1 13 - 40  1  9   - 2 16 50                         + 1058.762
  11   1 13 53  LONG.   - 38 21 34  PASS NO.   404 + 1051.491
 11   1 14 - 38  8 29   + 0 18  0                         + 1050.535
 11   1 15 - 36 15 29   + 2 53 10                         + 1041.547
 11   1 16 - 34 21 33   + 5 28 29                         + 1031.825
 11   1 17 - 32 26  9   + 8  3 45                         + 1021.399
 11   1 18 - 30 28 43   +10 38 45                         + 1010.304
 11   1 19 - 28 28 37   +13 13 16                         +  998.571
 11   1 20 - 26 25 11   +15 47  4                         +  986.237
 11   1 21 - 24 17 46   +18 19 51                         +  973.339
 11   1 22 - 22  5 36   +20 51 19                         +  959.917
 11   1 23 - 19 47 54   +23 21  8                         +  946.011
 11   1 24 - 17 23 48   +25 48 56                         +  931.664
 11   1 25 - 14 52 22   +28 14 14                         +  916.920
 11   1 26 - 12 12 37   +30 36 33                         +  901.822
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```
 11   1 27 -  9 23 28   +32 55 19                          +   886.421
 11   1 28 -  6 23 49   +35  9 51                          +   870.762
 11   1 29 -  3 12 29   +37 19 25                          +   854.897
 11   1 30 +  0 11 41   +39 23  8                          +   838.876
 11   1 31 +  3 49 48   +41 20  3                          +   822.753
 11   1 32 +  7 42 51   +43  9  6                          +   806.581
HDLBRG 101 11   1 32 14.719  S43.6413    1056.905     NE
 11   1 33 + 11 51 34   +44 49  4                          +   790.417
 11   1 34 + 16 16 20   +46 18 40                          +   774.316
HDLBRG 101 11   1 36 49.062  E72.9813    1783.454     NE         **
 11   1 35 + 20 57  0   +47 36 35                          +   758.337
 11   1 36 + 25 52 46   +48 41 27                          +   742.537
 11   1 37 + 31  2  0   +49 32  0                          +   726.977
 11   1 38 + 36 22 15   +50  7  3                          +   711.718
 11   1 39 + 41 50 15   +50 25 42                          +   696.819   TWILIGHT
 11   1 40 + 47 22  8   +50 27 21                          +   682.342   TWILIGHT
 11   1 41 + 52 53 43   +50 11 44                          +   668.349   TWILIGHT
 11   1 42 + 58 20 51   +49 39  0                          +   654.900   TWILIGHT
 11   1 43 + 63 39 48   +48 49 39                          +   642.056   TWILIGHT
 11   1 44 + 68 47 27   +47 44 30                          +   629.876   TWILIGHT
HDLBRG 101 11   1 42 20.093  E83.5510    3766.647     SE         **
 11   1 45 + 73 41 35   +46 24 36                          +   618.419
 11   1 46 + 78 20 46   +44 51 10                          +   607.742
 11   1 47 + 82 44 21   +43  5 28                          +   597.900
 11   1 48 + 86 52 20   +41  8 46                          +   588.945
 11   1 49 + 90 45 14   +39  2 19                          +   580.927
 11   1 50 + 94 23 53   +36 47 16                          +   573.892
 11   1 51 + 97 49 19   +34 24 42                          +   567.881
 11   1 52 +101  2 41   +31 55 37                          +   562.934
 11   1 53 +104  5 11   +29 20 54                          +   559.083
 11   1 54 +106 58  1   +26 41 21                          +   556.356
 11   1 55 +109 42 20   +23 57 42                          +   554.778
 11   1 56 +112 19 14   +21 10 37                          +   554.362
 11   1 57 +114 49 45   +18 20 41                          +   555.121
 11   1 58 +117 14 52   +15 28 29                          +   557.057
 11   1 59 +119 35 30   +12 34 29                          +   560.170
 11   2  0 +121 52 31   + 9 39 10                          +   564.450
 11   2  1 +124  6 42   + 6 43  0                          +   569.880
 11   2  2 +126 18 51   + 3 46 22                          +   576.438
 11   2  3 +128 29 43   + 0 49 40                          +   584.095
 11   2  4 +130 40  2   - 2  6 42                          +   592.815
 11   2  5 +132 50 30   - 5  2 22                          +   602.558
```

```
 11   2   6 +135   1 50   - 7 56 57                          +   613.275
 11   2   7 +137  14 46   -10 50  6                          +   624.914
 11   2   8 +139  30  2   -13 41 25                          +   637.417
 11   2   9 +141  48 22   -16 30 32                          +   650.723
 11   2  10 +144  10 34   -19 17  1                          +   664.766
 11   2  11 +146  37 27   -22  0 29                          +   679.476
 11   2  12 +149   9 51   -24 40 28                          +   694.783
 11   2  13 +151  48 40   -27 16 29                          +   710.612
 11   2  14 +154  34 49   -29 48  0                          +   726.888
 11   2  15 +157  29 16   -32 14 28                          +   743.533
 11   2  16 +160  32 58   -34 35 15                          +   760.471
 11   2  17 +163  46 54   -36 49 41                          +   777.624
 11   2  18 +167  11 59   -38 57  0                          +   794.915
 11   2  19 +170  49  1   -40 56 24                          +   812.269
 11   2  20 +174  38 42   -42 47  2                          +   829.611
 11   2  21 +178  41 24   -44 27 57                          +   846.867
 11   2  22 -177   2 47   -45 58 13                          +   863.968
 11   2  23 -172  34 14   -47 16 53                          +   880.843
 11   2  24 -167  53 52   -48 23  1                          +   897.426
 11   2  25 -163   3 11   -49 15 49                          +   913.655
 11   2  26 -158   4 21   -49 54 33                          +   929.469
 11   2  27 -152  59 59   -50 18 45                          +   944.809
 11   2  28 -147  53 11   -50 28  9                          +   959.623
 11   2  29 -142  47 12   -50 22 44                          +   973.859
 11   2  30 -137  45 16   -50  2 47                          +   987.469
 11   2  31 -132  50 18   -49 28 50                          +  1000.409
 11   2  32 -128   4 47   -48 41 35                          +  1012.640
 11   2  33 -123  30 36   -47 41 56                          +  1024.123
 11   2  34 -119   9  1   -46 30 51                          +  1034.824
 11   2  35 -115   0 47   -45  9 23                          +  1044.714
 11   2  36 -111   6  5   -43 38 31                          +  1053.766
 11   2  37 -107  24 42   -41 59 16                          +  1061.955  TWILIGHT
 11   2  38 -103  56  9   -40 12 33                          +  1069.263  TWILIGHT
 11   2  39 -100  39 44   -38 19 13                          +  1075.670  TWILIGHT
 11   2  40 -  97 34 35   -36 20  2                          +  1081.165  TWILIGHT
 11   2  41 -  94 39 49   -34 15 42                          +  1085.736  TWILIGHT
 11   2  42 -  91 54 30   -32  6 50                          +  1089.374  TWILIGHT
 11   2  43 -  89 17 43   -29 53 59                          +  1092.075  TWILIGHT
 11   2  44 -  86 48 33   -27 37 37                          +  1093.838  TWILIGHT
 11   2  45 -  84 26  9   -25 18 11                          +  1094.662
AGASTA 123 11   2 45 42.551   W57.6114    1763.111      NE         **
 11   2  46 -  82  9 44   -22 56  2                          +  1094.551
```

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 11   2 47 -  79 58 31   -20 31 31                          +  1093.512
 11   2 48 -  77 51 46   -18  4 55                          +  1091.551
LIMAPU 124 11   2 48 20.466   533.7587    1271.325     NE
 11   2 49 -  75 48 50   -15 36 31                          +  1088.682
 11   2 50 -  73 49  5   -13  6 33                          +  1084.915
LIMAPU 124 11   2 50 31.622   E27.6482    1198.636     NE          **
 11   2 51 -  71 51 52   -10 35 14                          +  1080.269
 11   2 52 -  69 56 38   - 8  2 48                          +  1074.759
 11   2 53 -  68  2 49   - 5 29 25                          +  1068.407
 11   2 54 -  66  9 52   - 2 55 17                          +  1061.233
 11   2 55 -  64 17 14   - 0 20 36                          +  1053.262
  11  2 55  7  LONG.   - 64  2 13   PASS NO.   405 +  1052.100
 11   2 56 -  62 24 23   + 2 14 29                          +  1044.521
 11   2 57 -  60 30 45   + 4 49 45                          +  1035.037
 11   2 58 -  58 35 49   + 7 25  1                          +  1024.839
 11   2 59 -  56 38 58   +10  0  4                          +  1013.960
 11   3  0 -  54 39 38   +12 34 42                          +  1002.432
 11   3  1 -  52 37  8   +15  8 39                          +   990.292
PANTIG 120 11   3  1 46.766   E56.8289    1574.506     NE          **
 11   3  2 -  50 30 48   +17 41 41                          +   977.575
 11   3  3 -  48 19 57   +20 13 28                          +   964.321
 11   3  4 -  46  3 45   +22 43 42                          +   950.569
 11   3  5 -  43 41 23   +25 12  0                          +   936.361
 11   3  6 -  41 11 57   +27 37 55                          +   921.741
 11   3  7 -  38 34 25   +30  1  0                          +   906.754
 11   3  8 -  35 47 48   +32 20 41                          +   891.445
 11   3  9 -  32 50 59   +34 36 18                          +   875.863
 11   3 10 -  29 42 46   +36 47 10                          +   860.058
 11   3 11 -  26 22  1   +38 52 25                          +   844.080
 11   3 12 -  22 47 37   +40 51  7                          +   827.982
 11   3 13 -  18 58 31   +42 42 14                          +   811.817
 11   3 14 -  14 53 54   +44 24 35                          +   795.641
 11   3 15 -  10 33 19   +45 56 55                          +   779.509
 11   3 16 -   5 56 44   +47 17 55                          +   763.480
 11   3 17 -   1  4 47   +48 26 13                          +   747.611
 11   3 18 +   4  1  6   +49 20 31                          +   731.963
HOLBRG 101 11   3 18 53.150   N 5.1181     720.335     NE
 11   3 19 +   9 18 44   +49 59 37                          +   716.595
 11   3 20 +  14 45  0   +50 22 32                          +   701.568
 11   3 21 +  20 16 11   +50 28 34                          +   686.943   TWILIGHT
 11   3 22 +  25 48 10   +50 17 23                          +   672.781   TWILIGHT
 11   3 23 +  31 16 44   +49 49  0   258                    +   659.145   TWILIGHT
```

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 11   3 24 + 36 38  1   +49  3 52                          +   646.094  TWILIGHT
 11   3 25 + 41 48 46   +48  2 42                          +   633.690  TWILIGHT
HDLBRG 101 11   3 23 35.444   E72.6828    1989.757     SE         **
 11   3 26 + 46 46 29   +46 46 31                          +   621.989
 11   3 27 + 51 29 32   +45 16 28                          +   611.051
 11   3 28 + 55 57  6   +43 33 49                          +   600.931
 11   3 29 + 60  9  3   +41 39 51                          +   591.682
 11   3 30 + 64  5 45   +39 35 48                          +   583.355
 11   3 31 + 67 47 57   +37 22 53                          +   575.997
 11   3 32 + 71 16 39   +35  2 11                          +   569.652
 11   3 33 + 74 33  0   +32 34 42                          +   564.359
 11   3 34 + 77 38 11   +30  1 22                          +   560.153
 11   3 35 + 80 33 24   +27 23  0                          +   557.064
 11   3 36 + 83 19 48   +24 40 21                          +   555.116
 11   3 37 + 85 58 31   +21 54  5                          +   554.329
 11   3 38 + 88 30 36   +19  4 50                          +   554.713
 11   3 39 + 90 57  2   +16 13 10                          +   556.275
 11   3 40 + 93 18 45   +13 19 34                          +   559.016
 11   3 41 + 95 36 37   +10 24 33                          +   562.927
 11   3 42 + 97 51 29   + 7 28 32                          +   567.996
 11   3 43 +100  4  6   + 4 31 57                          +   574.200
 11   3 44 +102 15 15   + 1 35 13                          +   581.514
 11   3 45 +104 25 39   - 1 21 18                          +   589.903
 11   3 46 +106 36  2   - 4 17 13                          +   599.328
 11   3 47 +108 47  6   - 7 12  9                          +   609.743
 11   3 48 +110 59 35   -10  5 44                          +   621.097
 11   3 49 +113 14 13   -12 57 36                          +   633.334
 11   3 50 +115 31 44   -15 47 21                          +   646.395
 11   3 51 +117 52 54   -18 34 36                          +   660.212
 11   3 52 +120 18 32   -21 18 55                          +   674.720
 11   3 53 +122 49 29   -23 59 53                          +   689.846
 11   3 54 +125 26 37   -26 37  0                          +   705.518
 11   3 55 +128 10 52   -29  9 46                          +   721.660
OOMERA 119 11   3 55 46.799   W43.9408     975.125     SE         **
 11   3 56 +131  3  9   -31 37 37                          +   738.195
 11   3 57 +134  4 28   -33 59 57                          +   755.048
OOMERA 119 11   3 57 50.972   S38.8023     954.973     SE
 11   3 58 +137 15 46   -36 16  7                          +   772.139
 11   3 59 +140 38  0   -38 25 21                          +   789.393
 11   4  0 +144 12  0   -40 26 53                          +   806.734
 11   4  1 +147 58 30   -42 19 52                          +   824.085
 11   4  2 +151 57 57   -44  3 22                          +   841.373
```

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11   4   3 +156 10 33   -45 36 27                          +  858.528
11   4   4 +160 36  3   -46 58 10                          +  875.478
11   4   5 +165 13 38   -48  7 34                          +  892.158
11   4   6 +170  1 58   -49  3 49                          +  908.503
11   4   7 +174 59  5   -49 46 10                          +  924.451
11   4   8 -179 57 34   -50 14  3                          +  939.944
11   4   9 -174 50 59   -50 27 11                          +  954.927
11   4  10 -169 44 24   -50 25 28                          +  969.348
11   4  11 -164 41  5   -50  9  8                          +  983.159
11   4  12 -159 44  2   -49 38 37                          +  996.314
11   4  13 -154 55 52   -48 54 36                          + 1008.772
11   4  14 -150 18 38   -47 57 57                          + 1020.494
11   4  15 -145 53 46   -46 49 37                          + 1031.445
11   4  16 -141 42  7   -45 30 37                          + 1041.595
11   4  17 -137 43 59   -44  2  0                          + 1050.915
11   4  18 -133 59 17   -42 24 44                          + 1059.381
11   4  19 -130 27 34   -40 39 46                          + 1066.971  TWILIGHT
11   4  20 -127  8 10   -38 47 59                          + 1073.668  TWILIGHT
11   4  21 -124  0 17   -36 50 11                          + 1079.456  TWILIGHT
11   4  22 -121  3  1   -34 47  3                          + 1084.323  TWILIGHT
11   4  23 -118 15 25   -32 39 15                          + 1088.261  TWILIGHT
11   4  24 -115 36 34   -30 27 20                          + 1091.265  TWILIGHT
11   4  25 -113  5 35   -28 11 47                          + 1093.330  TWILIGHT
11   4  26 -110 41 35   -25 53  4                          + 1094.457
11   4  27 -108 23 45   -23 31 33                          + 1094.648
11   4  28 -106 11 18   -21  7 36                          + 1093.909
11   4  29 -104  3 31   -18 41 29                          + 1092.247
11   4  30 -101 59 43   -16 13 31                          + 1089.671
11   4  31 - 99 59 14   -13 43 56                          + 1086.196
11   4  32 - 98  1 27   -11 12 57                          + 1081.834
11   4  33 - 96  5 48   - 8 40 47                          + 1076.605
11   4  34 - 94 11 41   - 6  7 38                          + 1070.526
11   4  35 - 92 18 35   - 3 33 42                          + 1063.618
11   4  36 - 90 25 57   - 0 59  9                          + 1055.906
QUITOE 125 11  4 36  8.172  W58.9526   1744.068    NE          **
  11  4 36 22  LONG.  - 89 42 53  PASS NO.  406 + 1052.663
11   4  37 - 88 33 13   + 1 35 49                          + 1047.415
11   4  38 - 86 39 52   + 4 11  2                          + 1038.171
2RSTON  99 11  4 37 59.800  S89.7392   3747.077    NE
11   4  39 - 84 45 20   + 6 46 17                          + 1028.204
11   4  40 - 82 49  3   + 9 21 23                          + 1017.546
11   4  41 - 80 50 24   +11 56  6                          + 1006.228
```

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CPCAN1 107 11  4 41  7.089  S70.4080    2148.860    NE
 11  4 42 - 78 48 47  +14 30 13                     +   994.284
BELVOR 113 11  4 42 48.315  S80.8865    2799.919    NE
PNSTAT  96 11  4 42 27.241  S84.6234    3131.713    NE
 11  4 43 - 76 43 32  +17  3 27                     +   981.753
PDRSPG 117 11  4 43 33.674  S72.5850    2215.101    NE
ABDEEN 112 11  4 43 18.204  S80.3244    2742.979    NE
 11  4 44 - 74 33 55  +19 35 33                     +   968.671
FTMONM 104 11  4 44 14.502  S78.2647    2564.079    NE
 11  4 45 - 72 19 11  +22  6 10                     +   955.077
LINCON 105 11  4 45 21.306  S77.9149    2510.283    NE
 11  4 46 - 69 58 30  +24 34 56                     +   941.014
 11  4 47 - 67 30 57  +27  1 28                     +   926.524
CPCAN1 107 11  4 47 29.764  E65.0764    1761.509    NE       **
 11  4 48 - 64 55 38  +29 25 16                     +   911.651
 11  4 49 - 62 11 28  +31 45 49                     +   896.441
 11  4 50 - 59 17 22  +34  2 29                     +   880.942
PDRSPG 117 11  4 50 32.460  E70.7270    1935.299    NE       **
ARKANS 109 11  4 50 26.033  E88.2804    3267.342    NE       **
2RSTON  99 11  4 50 16.886  E84.1482    2868.354    NE       **
 11  4 51 - 56 12 12  +36 14 35                     +   865.202
 11  4 52 - 52 54 48  +38 21 18                     +   849.272
BELVOR 113 11  4 52  9.936  E79.5463    2429.197    NE       **
ABDEEN 112 11  4 52 32.842  E79.6653    2425.706    NE       **
FTMONM 104 11  4 52 56.593  E78.7485    2346.011    NE       **
 11  4 53 - 49 24  2  +40 21 43                     +   833.205
PNSTAT  96 11  4 53 13.382  E83.6744    2727.974    NE       **
 11  4 54 - 45 38 49  +42 14 49                     +   817.053
LINCON 105 11  4 54 11.966  E80.5615    2439.166    NE       **
 11  4 55 - 41 38 17  +43 59 29                     +   800.871
 11  4 56 - 37 21 52  +45 34 27                     +   784.715
 11  4 57 - 32 49 25  +46 58 27                     +   768.642
HDLBRG 101 11  4 59 19.741  W82.1256    2387.695    NE       **
 11  4 58 - 28  1 22  +48 10  5                     +   752.711
 11  4 59 - 22 58 57  +49  8  3                     +   736.980
 11  5  0 - 17 44 10  +49 51  8                     +   721.510
 11  5  1 - 12 19 52  +50 18 15                     +   706.361
 11  5  2 -  6 49 39  +50 28 39                     +   691.594  TWILIGHT
 11  5  3 -  1 17 34  +50 21 53                     +   677.271  TWILIGHT
 11  5  4 +  4 12 11  +49 57 54                     +   663.454  TWILIGHT
HDLBRG 101 11  5  4 49.970  N 0.1285     651.803    SE
 11  5  5 +  9 35 36  +49 17  1                     +   650.202  TWILIGHT
```

11	5	6	+	14	49	15	+48	19	54				+	637.578	TWILIGHT
HOLBRG	101	11		5	4	51.020	E	0.3673		654.743			SE	**	
11	5	7	+	19	50	26	+47	7	29				+	625.640	
11	5	8	+	24	37	19	+45	40	54				+	614.446	
11	5	9	+	29	8	52	+44	1	23				+	604.053	
11	5	10	+	33	24	47	+42	10	14				+	594.516	
11	5	11	+	37	25	18	+40	8	42				+	585.884	
11	5	12	+	41	11	8	+37	57	58				+	578.208	
11	5	13	+	44	43	11	+35	39	12				+	571.532	
11	5	14	+	48	2	36	+33	13	23				+	565.896	
11	5	15	+	51	10	32	+30	41	29				+	561.338	
11	5	16	+	54	8	12	+28	4	21				+	557.888	
11	5	17	+	56	56	46	+25	22	45				+	555.574	
11	5	18	+	59	37	22	+22	37	22				+	554.414	
11	5	19	+	62	11	4	+19	48	50				+	554.424	
11	5	20	+	64	38	52	+16	57	44				+	555.612	
11	5	21	+	67	1	44	+14	4	34				+	557.980	
11	5	22	+	69	20	31	+11	9	52				+	561.521	
11	5	23	+	71	36	5	+ 8	14	3				+	566.225	
11	5	24	+	73	49	13	+ 5	17	33				+	572.074	
11	5	25	+	76	0	43	+ 2	20	48				+	579.040	
11	5	26	+	78	11	15	- 0	35	50				+	587.094	
11	5	27	+	80	21	36	- 3	31	58				+	596.197	
11	5	28	+	82	32	27	- 6	27	13				+	606.305	
11	5	29	+	84	44	32	- 9	21	14				+	617.369	
11	5	30	+	86	58	35	-12	13	36				+	629.335	
11	5	31	+	89	15	19	-15	3	59				+	642.142	
11	5	32	+	91	35	30	-17	51	57				+	655.728	
11	5	33	+	93	59	57	-20	37	6				+	670.025	
11	5	34	+	96	29	30	-23	19	1				+	684.964	
11	5	35	+	99	5	1	-25	57	12				+	700.471	
11	5	36	+101	47	24		-28	31	11				+	716.472	
11	5	37	+104	37	36		-31	0	23				+	732.891	
11	5	38	+107	36	34		-33	24	14				+	749.650	
11	5	39	+110	45	19		-35	42	5				+	766.673	
11	5	40	+114	4	44		-37	53	12				+	783.882	
11	5	41	+117	35	45		-39	56	48				+	801.201	
11	5	42	+121	19	5		-41	52	4				+	818.554	
11	5	43	+125	15	18		-43	38	6				+	835.867	
11	5	44	+129	24	41		-45	13	56				+	853.069	
11	5	45	+133	47	3		-46	38	38				+	870.089	
11	5	46	+138	21	46		-47	51	16				+	886.858	

11	5	47	+143	7	40	-48	50	55				+ 903.312	
11	5	48	+148	2	53	-49	36	51				+ 919.389	
11	5	49	+153	5	1	-50	8	26				+ 935.029	
11	5	50	+158	11	10	-50	25	17				+ 950.177	
11	5	51	+163	18	9	-50	27	17				+ 964.779	
11	5	52	+168	22	40	-50	14	35				+ 978.785	
11	5	53	+173	21	38	-49	47	33				+ 992.150	
11	5	54	+178	12	19	-49	6	50				+ 1004.831	
11	5	55	-177	7	29	-48	13	14				+ 1016.788	
11	5	56	-172	39	22	-47	7	43				+ 1027.987	
11	5	57	-168	24	19	-45	51	16				+ 1038.393	
11	5	58	-164	22	45	-44	24	56				+ 1047.979	
11	5	59	-160	34	42	-42	49	43				+ 1056.718	
11	6	0	-156	59	46	-41	6	34				+ 1064.589	TWILIGHT
11	6	1	-153	37	21	-39	16	23				+ 1071.572	TWILIGHT
11	6	2	-150	26	39	-37	20	0				+ 1077.652	TWILIGHT
11	6	3	-147	26	47	-35	18	7				+ 1082.815	TWILIGHT
11	6	4	-144	36	51	-33	11	24				+ 1087.053	TWILIGHT
11	6	5	-141	55	55	-31	0	27				+ 1090.357	TWILIGHT
11	6	6	-139	23	4	-28	45	45				+ 1092.724	TWILIGHT
11	6	7	-136	57	23	-26	27	47				+ 1094.154	TWILIGHT
11	6	8	-134	38	6	-24	6	56				+ 1094.647	
11	6	9	-132	24	23	-21	43	33				+ 1094.209	
11	6	10	-130	15	31	-19	17	57				+ 1092.845	
11	6	11	-128	10	48	-16	50	25				+ 1090.566	
11	6	12	-126	9	32	-14	21	13				+ 1087.382	
11	6	13	-124	11	9	-11	50	34				+ 1083.308	
11	6	14	-122	15	2	- 9	18	42				+ 1078.359	
11	6	15	-120	20	37	- 6	45	48				+ 1072.556	
11	6	16	-118	27	20	- 4	12	3				+ 1065.917	
11	6	17	-116	34	38	- 1	37	40				+ 1058.467	
11	6	17	37	LONG.		-115	23	34	PASS NO.	407	+	1053.269	
11	6	18	-114	42	1	+ 0	57	12				+ 1050.228	
11	6	19	-112	48	53	+ 3	32	20				+ 1041.228	
11	6	20	-110	54	43	+ 6	7	34				+ 1031.495	
11	6	21	-108	58	58	+ 8	42	41				+ 1021.061	
11	6	22	-107	0	59	+11	17	29				+ 1009.956	
WHITES	111	11	6	22	8.185	580.3460			2802.375		NE		
BOLDER	95	11	6	22	52.906	586.1369			3295.105		NE		
11	6	23	-105	0	12	+13	51	44				+ 998.214	
11	6	24	-102	55	58	+16	25	11				+ 985.872	
11	6	25	-100	47	33	+18	57	33				+ 972.966	

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 11  6 26 - 98 34 12  +21 28 32                                  +  959.535
FTSILL 110 11  6 26  4.130  S64.9050   1817.585    NE
 11  6 27 - 96 15  8  +23 57 46                                  +  945.621
 11  6 28 - 93 49 28  +26 24 52                                  +  931.266
CPCAN1 107 11  6 28 44.805  W57.3961   1502.753    NE         **
 11  6 29 - 91 16 14  +28 49 21                                  +  916.512
ARKANS 109 11  6 29 11.296  S39.7239   1140.324    NE
UWISCN 102 11  6 29 35.809  S65.8387   1771.631    NE
 11  6 30 - 88 34 27  +31 10 44                                  +  901.406
2RSTON  99 11  6 30 40.306  S15.6243    920.861    NE
UILNOS  97 11  6 30  7.347  S53.2066   1363.582    NE
 11  6 31 - 85 43  1  +33 28 24                                  +  885.995
PDRSPG 117 11  6 31 47.604  W44.1937   1155.836    NE         **
WHITES 111 11  6 31  5.911  E76.2642   2275.386    NE         **
FTSILL 110 11  6 31 31.433  E63.7848   1644.408    NE         **
ARKANS 109 11  6 31 41.177  E41.3308   1115.683    NE         **
GOLDST 103 11  6 31 51.415  E88.9762   3336.245    NE         **
2RSTON  99 11  6 31 32.072  E16.9271    912.307    NE         **
 11  6 32 - 82 40 49  +35 41 41                                  +  870.326
CPCAN1 107 11  6 32 38.876  N55.1024   1353.161    NE
LANGLY 106 11  6 32 39.082  W26.5691    947.666    NE         **
 11  6 33 - 79 26 41  +37 49 48                                  +  854.451
BPOINT 126 11  6 33 41.189  N 6.7602    848.656    NE
BELVOR 113 11  6 33 40.509  N 4.2709    845.710    NE
ABDEEN 112 11  6 33 58.430  N 2.7842    839.711    NE
LANGLY 106 11  6 33 53.074  N20.7948    891.376    NE
PNSTAT  96 11  6 33 27.737  S16.8610    879.992    NE
BPOINT 126 11  6 33 17.149  W 9.2251    859.675    NE         **
BELVOR 113 11  6 33 25.101  W 5.9571    851.811    NE         **
ABDEEN 112 11  6 33 48.069  W 4.1314    843.550    NE         **
 11  6 34 - 75 59 28  +39 51 52                                  +  838.421
PDRSPG 117 11  6 34  7.741  N36.9136   1013.745    NE
FTMONM 104 11  6 34 32.337  N 5.5412    833.174    NE
FTMONM 104 11  6 34 11.840  W 8.2453    842.938    NE         **
UILNOS  97 11  6 34  7.144  E58.8654   1418.588    NE         **
PNSTAT  96 11  6 34 28.608  E22.6896    891.143    NE         **
BOLDER  95 11  6 34  7.906  E84.2668   2792.279    NE         **
 11  6 35 - 72 18  5  +41 46 53                                  +  822.287
LINCON 105 11  6 35 12.423  S 4.0799    820.778    NE
LINCON 105 11  6 35 27.255  E 6.1761    819.147    NE         **
UWISCN 102 11  6 35 42.993  E72.5371   1915.054    NE         **
 11  6 36 - 68 21 36  +43 33 46                                  +  806.106
```

```
 11   6 37 - 64  9 20   +45 11 18                          +   789.932
 11   6 38 - 59 41  1   +46 38 11                          +   773.822
 11   6 39 - 54 56 58   +47 53  4                          +   757.834
 11   6 40 - 49 58  8   +48 54 38                          +   742.027
 11   6 41 - 44 46 22   +49 41 36                          +   726.460
 11   6 42 - 39 24 17   +50 12 53                          +   711.196
 11   6 43 - 33 55 18   +50 27 37                          +   696.294  TWILIGHT
 11   6 44 - 28 23 23   +50 25 16                          +   681.816  TWILIGHT
 11   6 45 - 22 52 44   +50  5 41                          +   667.824  TWILIGHT
 11   6 46 - 17 27 25   +49 29  6                          +   654.378  TWILIGHT
 11   6 47 - 12 11  3   +48 36  5                          +   641.541  TWILIGHT
 11   6 48 -  7  6 31   +47 27 31                          +   629.371  TWILIGHT
HDLBRG 101 11  6 46  6.474  W77.7597   3219.862     SE          **
 11   6 49 -  2 15 53   +46  4 28                          +   617.927
 11   6 50 +  2 19 37   +44 28 11                          +   607.266
 11   6 51 +  6 39 30   +42 39 56                          +   597.444
HDLBRG 101 11  6 51 29.760  S60.4641   1073.816     SE
 11   6 52 + 10 43 55   +40 40 58                          +   588.513
 11   6 53 + 14 33 25   +38 32 31                          +   580.523
 11   6 54 + 18  8 53   +36 15 44                          +   573.519
 11   6 55 + 21 31 26   +33 51 39                          +   567.545
 11   6 56 + 24 42 12   +31 21 16                          +   562.637
 11   6 57 + 27 42 24   +28 45 25                          +   558.829
 11   6 58 + 30 33 12   +26  4 54                          +   556.149
 11   6 59 + 33 15 45   +23 20 26                          +   554.619
 11   7  0 + 35 51  9   +20 32 39                          +   554.256
 11   7  1 + 38 20 23   +17 42  9                          +   555.068
 11   7  2 + 40 44 26   +14 49 28                          +   557.062
 11   7  3 + 43  4 12   +11 55  6                          +   560.232
 11   7  4 + 45 20 32   + 8 59 31                          +   564.570
 11   7  5 + 47 34 15   + 6  3  9                          +   570.059
 11   7  6 + 49 46  6   + 3  6 24                          +   576.675
 11   7  7 + 51 56 50   + 0  9 40                          +   584.390
 11   7  8 + 54  7 11   - 2 46 40                          +   593.166
 11   7  9 + 56 17 52   - 5 42 12                          +   602.963
 11   7 10 + 58 29 36   - 8 36 36                          +   613.731
 11   7 11 + 60 43  6   -11 29 28                          +   625.419
 11   7 12 + 62 59  5   -14 20 26                          +   637.968
 11   7 13 + 65 18 22   -17  9  6                          +   651.315
 11   7 14 + 67 41 41   -19 55  4                          +   665.395
 11   7 15 + 70  9 53   -22 37 53                          +   680.139
 11   7 16 + 72 43 51   -25 17  7                          +   695.475
```

11	7	17	+	75	24	26	-27	52	16	+ 711.327	
11	7	18	+	78	12	35	-30	22	47	+ 727.621	
11	7	19	+	81	9	18	-32	48	7	+ 744.280	
11	7	20	+	84	15	31	-35	7	35	+ 761.226	
11	7	21	+	87	32	12	-37	20	32	+ 778.383	
11	7	22	+	91	0	15	-39	26	10	+ 795.673	
11	7	23	+	94	40	28	-41	23	40	+ 813.021	
11	7	24	+	98	33	28	-43	12	9	+ 830.352	
11	7	25	+102		39	35	-44	50	42	+ 847.594	
11	7	26	+106		58	47	-46	18	20	+ 864.676	
11	7	27	+111		30	35	-47	34	7	+ 881.528	
11	7	28	+116		13	54	-48	37	9	+ 898.086	
11	7	29	+121		7	3	-49	26	37	+ 914.285	
11	7	30	+126		7	48	-50	1	51	+ 930.067	
11	7	31	+131		13	20	-50	22	27	+ 945.373	
11	7	32	+136		20	30	-50	28	11	+ 960.151	
11	7	33	+141		26	2	-50	19	8	+ 974.348	
11	7	34	+146		26	45	-49	55	38	+ 987.919	
11	7	35	+151		19	48	-49	18	16	+ 1000.818	
11	7	36	+156		2	52	-48	27	48	+ 1013.007	
11	7	37	+160		34	11	-47	25	9	+ 1024.449	
11	7	38	+164		52	37	-46	11	19	+ 1035.108	
11	7	39	+168		57	36	-44	47	20	+ 1044.957	
11	7	40	+172		49	3	-43	14	13	+ 1053.968	
11	7	41	+176		27	15	-41	32	56	+ 1062.117	TWILIGHT
11	7	42	+179		52	45	-39	44	25	+ 1069.385	TWILIGHT
11	7	43	-176		53	41	-37	49	29	+ 1075.755	TWILIGHT
11	7	44	-173		51	12	-35	48	53	+ 1081.212	TWILIGHT
11	7	45	-170		58	52	-33	43	18	+ 1085.748	TWILIGHT
11	7	46	-168		15	46	-31	33	20	+ 1089.352	TWILIGHT
11	7	47	-165		40	58	-29	19	31	+ 1092.022	TWILIGHT
11	7	48	-163		13	36	-27	2	19	+ 1093.754	TWILIGHT
11	7	49	-160		52	48	-24	42	8	+ 1094.549	
11	7	50	-158		37	46	-22	19	21	+ 1094.412	
11	7	51	-156		27	46	-19	54	17	+ 1093.348	
11	7	52	-154		22	4	-17	27	13	+ 1091.364	
11	7	53	-152		20	1	-14	58	25	+ 1088.473	
11	7	54	-150		20	59	-12	28	7	+ 1084.688	
11	7	55	-148		24	22	- 9	56	32	+ 1080.024	
11	7	56	-146		29	36	- 7	23	53	+ 1074.497	
11	7	57	-144		36	6	- 4	50	21	+ 1068.130	
11	7	58	-142		43	20	- 2	16	8	+ 1060.942	

```
  11   7 58 52  LONG.   -141   4 16  PASS NO.   408 + 1053.918
  11   7 59 -140 50 45   + 0 18 36                          + 1052.959
  11   8  0 -138 57 49   + 2 53 40                          + 1044.206
  11   8  1 -137  4  0   + 5 28 52                          + 1034.711
  11   8  2 -135  8 43   + 8  4  0                          + 1024.504
  11   8  3 -133 11 23   +10 38 52                          + 1013.615
  11   8  4 -131 11 24   +13 13 15                          + 1002.079
  11   8  5 -129  8  7   +15 46 53                          +  989.930
  11   8  6 -127  0 51   +18 19 30                          +  977.204
  11   8  7 -124 48 51   +20 50 49                          +  963.942
  11   8  8 -122 31 20   +23 20 29                          +  950.182
STNFDU  98 11   8  8  9.145  S66.8619    1882.526     NE
  11   8  9 -120  7 27   +25 48  7                         +  935.965
  11   8 10 -117 36 16   +28 13 16                         +  921.336
NELCAL 121 11   8 10 14.369  S28.1044    1022.353     NE
GOLDST 103 11   8 10 17.232  S43.4012    1196.587     NE
  11   8 11 -114 56 47   +30 35 27                         +  906.339
NELCAL 121 11   8 11 51.351  E28.3326     997.303     NE         **
  11   8 12 -112  7 57   +32 54  4                         +  891.021
WHITES 111 11   8 12 21.075  W27.8669     985.220     NE         **
FTSILL 110 11   8 12 46.619  W56.5951    1419.654     NE         **
ARKANS 109 11   8 12 56.321  W71.8722    2001.663     NE         **
2RSTON  99 11   8 12 47.216  W78.4293    2411.804     NE         **
  11   8 13 -109  8 38  +35  8 29                         +  875.430
WHITES 111 11   8 13 45.533  N24.3757     936.574     NE
PDRSPG 117 11   8 13  2.769  W88.7748    3320.995     NE         **
GOLDST 103 11   8 13  6.579  E45.1295    1169.630     NE         **
  11   8 14 -105 57 42   +37 17 56                         +  859.615
BOLDER  95 11   8 14 12.909  S19.5409     900.048     NE
BELVOR 113 11   8 14 40.307  W81.4677    2582.543     NE         **
STNFDU  98 11   8 14  3.454  E67.5559    1762.742     NE         **
  11   8 15 -102 33 58   +39 21 35                         +  843.626
ABDEEN 112 11   8 15  3.254  W80.9865    2531.626     NE         **
FTMONM 104 11   8 15 27.046  W81.4523    2555.661     NE         **
UILNOS  97 11   8 15 22.288  W59.7337    1445.756     NE         **
PNSTAT  96 11   8 15 43.753  W75.6953    2137.299     NE         **
BOLDER  95 11   8 15 22.988  E25.2219     912.276     NE         **
  11   8 16 - 98 56 20   +41 18 27                         +  827.518
FTSILL 110 11   8 16  8.286  N48.1363    1158.689     NE
LINCON 105 11   8 16 42.461  W78.4518    2288.741     NE         **
UWISCN 102 11   8 16 58.199  W32.4805     940.875     NE         **
  11   8 17 - 95  3 50   +43  7 29                         +  811.343
```

```
 11   8 18 - 90 55 42  +44 47 28                                  +  795.157
ARKANS 109 11   8 18   2.098  N60.5207    1401.662     NE
UWISCN 102 11   8 18 17.300  N18.8693     829.669     NE
2RSTON  99 11   8 18 58.005  N66.0540    1564.360     NE
UILNOS  97 11   8 18 37.076  N42.9951    1026.228     NE
 11   8 19 - 86 31 33  +46 17 10                                  +  779.016
 11   8 20 - 81 51 32  +47 35 13                                  +  762.978
BELVOR 113 11   8 20 57.522  N62.3595    1382.707     NE
CPCAN1 107 11   8 20 15.417  N81.8142    2417.979     NE
PNSTAT  96 11   8 20 48.726  N54.1645    1171.736     NE
 11   8 21 - 76 56 25  +48 40 16                                  +  747.101
PORSPG 117 11   8 21 16.638  N72.1252    1764.143     NE
ABDEEN 112 11   8 21 10.088  N60.6101    1324.739     NE
FTMONM 104 11   8 21 34.086  N59.3377    1279.298     NE
 11   8 22 - 71 47 49  +49 31  4                                  +  731.446
LINCON 105 11   8 22  3.275  N51.6003    1092.728     NE
 11   8 23 - 66 28 11  +50  6 26                                  +  716.072
 11   8 24 - 61  0 42  +50 25 27                                  +  701.041
 11   8 25 - 55 29 14  +50 27 31                                  +  686.414  TWILIGHT
 11   8 26 - 49 57 57  +50 12 21                                  +  672.253  TWILIGHT
 11   8 27 - 44 30 59  +49 40  5                                  +  658.620  TWILIGHT
 11   8 28 - 39 12  5  +48 51 13                                  +  645.575  TWILIGHT
 11   8 29 - 34  4 21  +47 46 34                                  +  633.179  TWILIGHT
 11   8 30 - 29 10  3  +46 27  9                                  +  621.490
 11   8 31 - 24 30 38  +44 54 10                                  +  610.568
 11   8 32 - 20  6 46  +43  8 54                                  +  600.467
 11   8 33 - 15 58 28  +41 12 35                                  +  591.241
 11   8 34 - 12  5 14  +39  6 30                                  +  582.941
 11   8 35 -  8 26 15  +36 51 46                                  +  575.614
 11   8 36 -  5  0 30  +34 29 30                                  +  569.303
 11   8 37 -  1 46 49  +32  0 39                                  +  564.049
 11   8 38 +  1 15 59  +29 26  9                                  +  559.885
 11   8 39 +  4  9  5  +26 46 46                                  +  556.842
 11   8 40 +  6 53 40  +24  3 16                                  +  554.942
 11   8 41 +  9 30 48  +21 16 17                                  +  554.206
 11   8 42 + 12  1 32  +18 26 26                                  +  554.644
 11   8 43 + 14 26 51  +15 34 16                                  +  556.263
 11   8 44 + 16 47 39  +12 40 17                                  +  559.061
 11   8 45 + 19  4 49  + 9 44 57                                  +  563.030
 11   8 46 + 21 19  8  + 6 48 43                                  +  568.157
 11   8 47 + 23 31 25  + 3 52  0                                  +  574.420
 11   8 48 + 25 42 23  + 0 55 13                                  +  581.792
```

11	8	49	+	27	52	48	-	2	1	17	+ 590.238
11	8	50	+	30	3	21	-	4	57	6	+ 599.717
11	8	51	+	32	14	46	-	7	51	51	+ 610.185
11	8	52	+	34	27	45	-10	45	11		+ 621.589
11	8	53	+	36	43	4	-13	36	43		+ 633.873
11	8	54	+	39	1	28	-16	26	3		+ 646.976
11	8	55	+	41	23	43	-19	12	47		+ 660.832
11	8	56	+	43	50	38	-21	56	30		+ 675.374
11	8	57	+	46	23	4	-24	36	45		+ 690.530
11	8	58	+	49	1	55	-27	13	2		+ 706.227
11	8	59	+	51	48	7	-29	44	50		+ 722.389
11	9	0	+	54	42	36	-32	11	35		+ 738.940
11	9	1	+	57	46	21	-34	32	39		+ 755.802
11	9	2	+	61	0	21	-36	47	22		+ 772.899
11	9	3	+	64	25	31	-38	54	58		+ 790.153
11	9	4	+	68	2	39	-40	54	40		+ 807.489
11	9	5	+	71	52	26	-42	45	34		+ 824.830
11	9	6	+	75	55	18	-44	26	45		+ 842.105
11	9	7	+	80	11	18	-45	57	16		+ 859.242
11	9	8	+	84	40	5	-47	16	9		+ 876.171
11	9	9	+	89	20	42	-48	22	30		+ 892.826
11	9	10	+	94	11	40	-49	15	28		+ 909.142
11	9	11	+	99	10	50	-49	54	21		+ 925.059
11	9	12	+104	15	33		-50	18	40		+ 940.519
11	9	13	+109	22	42		-50	28	9		+ 955.466
11	9	14	+114	29	3		-50	22	47		+ 969.850
11	9	15	+119	31	20		-50	2	51		+ 983.621
11	9	16	+124	26	38		-49	28	53		+ 996.736
11	9	17	+129	12	27		-48	41	35		+ 1009.152
11	9	18	+133	46	54		-47	41	53		+ 1020.833
11	9	19	+138	8	41		-46	30	44		+ 1031.743
11	9	20	+142	17	7		-45	9	10		+ 1041.851
11	9	21	+146	11	58		-43	38	13		+ 1051.130
11	9	22	+149	53	27		-41	58	52		+ 1059.555
11	9	23	+153	22	6		-40	12	3		+ 1067.106 TWILIGHT
11	9	24	+156	38	34		-38	18	37		+ 1073.764 TWILIGHT
11	9	25	+159	43	45		-36	19	21		+ 1079.515 TWILIGHT
11	9	26	+162	38	32		-34	14	56		+ 1084.347 TWILIGHT
11	9	27	+165	23	52		-32	6	0		+ 1088.251 TWILIGHT
11	9	28	+168	0	39		-29	53	5		+ 1091.221 TWILIGHT
11	9	29	+170	29	48		-27	36	40		+ 1093.256 TWILIGHT
11	9	30	+172	52	10		-25	17	12		+ 1094.354

```
 11   9 31 +175   8 33   -22 55   1                          + 1094.518
 11   9 32 +177  19 44   -20 30 29                          + 1093.753
 11   9 33 +179  26 26   -18  3 53                          + 1092.067
 11   9 34 -178  30 41   -15 35 30                          + 1089.470
SAMOAI 114 11   9 34 30.174   W39.4682    1345.488     NE          **
 11   9 35 -176  30 58   -13  5 34                          + 1085.975
 11   9 36 -174  33 50   -10 34 18                          + 1081.595
 11   9 37 -172  38 39   - 8  1 55                          + 1076.349
 11   9 38 -170  44 54   - 5 28 36                          + 1070.254
SAMOAI 114 11   9 38   0.926   N49.4271    1508.311     NE
 11   9 39 -168  52  1   - 2 54 33                          + 1063.333
 11   9 40 -166  59 28   - 0 19 57                          + 1055.608
  11   9 40   7  LONG.   -166 44 55   PASS NO.   409 + 1054.512
 11   9 41 -165   6 42   + 2 15  1                          + 1047.104
 11   9 42 -163  13  9   + 4 50 10                          + 1037.850
 11   9 43 -161  18 19   + 7 25 19                          + 1027.873
BSANDS 100 11   9 43 46.625   S62.3333    1813.832     NE
 11   9 44 -159  21 35   +10  0 14                          + 1017.205
 11   9 45 -157  22 21   +12 34 43                          + 1005.878
 11   9 46 -155  19 59   +15  8 32                          +  993.926
 11   9 47 -153  13 49   +17 41 24                          +  981.385
 11   9 48 -151   3  7   +20 13  2                          +  968.295
BSANDS 100 11   9 48 43.255   E55.0564    1493.894     NE          **
 11   9 49 -148  47  7   +22 43  7                          +  954.692
 11   9 50 -146  24 57   +25 11 15                          +  940.620
 11   9 51 -143  55 44   +27 37  1                          +  926.121
 11   9 52 -141  18 29   +29 59 57                          +  911.239
 11   9 53 -138  32 10   +32 19 29                          +  896.019
WHITES 111 11   9 53 36.261   W86.0675    3069.350     NE          **
 11   9 54 -135  35 41   +34 34 59                          +  880.510
GOLDST 103 11   9 54 21.744   W70.2344    1913.203     NE          **
 11   9 55 -132  27 51   +36 45 44                          +  864.761
STNFDU  98 11   9 55 18.619   W49.3336    1227.103     NE          **
 11   9 56 -129   7 31   +38 50 54                          +  848.821
BOLDER  95 11   9 56 38.236   W75.2901    2122.809     NE          **
 11   9 57 -125  33 35   +40 49 33                          +  832.743
STNFDU  98 11   9 57 53.629   N38.6258    1011.617     NE
 11   9 58 -121  45  0   +42 40 38                          +  816.581
UWISCN 102 11   9 58 13.446   W84.7028    2785.212     NE          **
 11   9 59 -117  40 59   +44 23  0                          +  800.389
GOLDST 103 11   9 59 11.639   N58.7226    1352.578     NE
 11 10  0 -113  20 59   +45 55 24                          +  784.223
```

```
 11 10  1 -108 45  3  +47 16 31                          +  768.141
WHITES 111 11 10  1 24.999  N72.4284   1815.236    NE
BOLDER  95 11 10  1 43.518  N55.2655   1203.676    NE
 11 10  2 -103 53 46  +48 25  0                         +  752.201
 11 10  3 - 98 48 31  +49 19 31                          +  736.463
FTSILL 110 11 10  3  4.474  N74.4299   1871.772    NE
 11 10  4 - 93 31 30  +49 58 55                          +  720.986
ARKANS 109 11 10  4 30.497  N75.8875   1911.473    NE
UWISCN 102 11 10  4 42.444  N53.5695   1101.535    NE
UILNOS  97 11 10  4 58.368  N64.7484   1390.671    NE
 11 10  5 - 88  5 46  +50 22 11                          +  705.833
2RSTON  99 11 10  5 15.403  N77.1471   1965.279    NE
 11 10  6 - 82 35  1  +50 28 37                          +  691.064  TWILIGHT
BELVOR 113 11 10  6 59.018  N69.3421   1511.926    SE
CPCAN1 107 11 10  6 21.321  N86.4972   2668.145    SE
PNSTAT  96 11 10  6 50.984  N63.5109   1303.201    SE
 11 10  7 - 77  3 23  +50 17 52                          +  676.741  TWILIGHT
PDRSPG 117 11 10  7 16.589  N76.5056   1864.797    SE
ABDEEN 112 11 10  7 10.554  N67.2440   1423.798    SE
FTMONM 104 11 10  7 32.883  N64.7025   1325.256    SE
 11 10  8 - 71 35  1  +49 49 58                          +  662.925  TWILIGHT
LINCON 105 11 10  8  0.837  N55.4077   1069.782    SE
 11 10  9 - 66 13 48  +49  5 19                          +  649.679  TWILIGHT
 11 10 10 - 61  3  1  +48  4 38                          +  637.062  TWILIGHT
 11 10 11 - 56  5 10  +46 48 55                          +  625.135
 11 10 12 - 51 21 54  +45 19 20                          +  613.956
 11 10 13 - 46 54  3  +43 37  7                          +  603.581
LINCON 105 11 10 13 32.384  E85.4150   2363.936    SE        **
 11 10 14 - 42 41 48  +41 43 33                          +  594.066
 11 10 15 - 38 44 47  +39 39 53                          +  585.460
 11 10 16 - 35  2 15  +37 27 18                          +  577.814
 11 10 17 - 31 33 13  +35  6 53                          +  571.171
 11 10 18 - 28 16 33  +32 39 40                          +  565.573
 11 10 19 - 25 11  5  +30  6 33                          +  561.056
 11 10 20 - 22 15 35  +27 28 22                          +  557.651
 11 10 21 - 19 28 55  +24 45 52                          +  555.384
 11 10 22 - 16 49 58  +21 59 44                          +  554.275
 11 10 23 - 14 17 40  +19 10 34                          +  554.339
 11 10 24 - 11 51  2  +16 18 56                          +  555.582
 11 10 25 -  9 29  9  +13 25 22                          +  558.007
 11 10 26 -  7 11  7  +10 30 19                          +  561.606
 11 10 27 -  4 56  7  + 7 34 16                          +  566.369
```

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 11  10  28  -   2  43  22   + 4  37  37                          +  572.276
 11  10  29  -   0  32   6   + 1  40  47                          +  579.301
SANANA 116 11  10  29  14.496   N11.3630     591.787     SE
SANANA 116 11  10  29  34.065   E 8.3120     589.454     SE          **
 11  10  30  +   1  38  24   - 1  15  51                          +  587.412
 11  10  31  +   3  48  52   - 4  11  54                          +  596.571
 11  10  32  +   6   0   1   - 7   7   0                          +  606.733
 11  10  33  +   8  12  34   -10   0  46                          +  617.847
 11  10  34  +  10  27  15   -12  52  50                          +  629.860
 11  10  35  +  12  44  49   -15  42  49                          +  642.712
 11  10  36  +  15   6   2   -18  30  18                          +  656.338
 11  10  37  +  17  31  43   -21  14  52                          +  670.671
 11  10  38  +  20   2  42   -23  56   5                          +  685.641
JOBURG 118 11  10  38  47.673   W45.6502     949.429     SE          **
 11  10  39  +  22  39  52   -26  33  28                          +  701.174
 11  10  40  +  25  24   9   -29   6  31                          +  717.197
JOBURG 118 11  10  40  59.097   S44.1355     974.215     SE
 11  10  41  +  28  16  28   -31  34  39                          +  733.632
 11  10  42  +  31  17  50   -33  57  17                          +  750.403
 11  10  43  +  34  29  12   -36  13  44                          +  767.432
 11  10  44  +  37  51  30   -38  23  15                          +  784.643
 11  10  45  +  41  25  36   -40  25   4                          +  801.958
 11  10  46  +  45  12  12   -42  18  19                          +  819.303
 11  10  47  +  49  11  49   -44   2   6                          +  836.605
 11  10  48  +  53  24  35   -45  35  26                          +  853.790
 11  10  49  +  57  50  17   -46  57  23                          +  870.788
 11  10  50  +  62  28   7   -48   7   0                          +  887.534
 11  10  51  +  67  16  45   -49   3  25                          +  903.961
 11  10  52  +  72  14  11   -49  45  56                          +  920.007
 11  10  53  +  77  17  53   -50  13  57                          +  935.614
 11  10  54  +  82  24  49   -50  27  10                          +  950.727
 11  10  55  +  87  31  45   -50  25  31                          +  965.291
 11  10  56  +  92  35  27   -50   9  11                          +  979.259
 11  10  57  +  97  32  49   -49  38  40                          +  992.584
 11  10  58  +102  21  17   -48  54  37                          + 1005.224
 11  10  59  +106  58  48   -47  57  55                          + 1017.140
 11  11   0  +111  23  54   -46  49  30                          + 1028.297
 11  11   1  +115  35  44   -45  30  26                          + 1038.662
 11  11   2  +119  34   2   -44   1  42                          + 1048.206
 11  11   3  +123  18  51   -42  24  20                          + 1056.905
 11  11   4  +126  50  40   -40  39  17                          + 1064.736  TWILIGHT
 11  11   5  +130  10   8   -38  47  24                          + 1071.681  TWILIGHT
```

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 11 11  6 +133 18  3  -36 49 30                          + 1077.723  TWILIGHT
 11 11  7 +136 15 22  -34 46 18                          + 1082.850  TWILIGHT
OOMERA 119 11 11  7 10.767  S21.6624   1152.745    NE
 11 11  8 +139  2 58  -32 38 25                          + 1087.053  TWILIGHT
OOMERA 119 11 11  8 41.898  E23.2277   1169.844    NE        **
 11 11  9 +141 41 48  -30 26 26                          + 1090.324  TWILIGHT
 11 11 10 +144 12 46  -28 10 50                          + 1092.660  TWILIGHT
 11 11 11 +146 36 45  -25 52  5                          + 1094.061
 11 11 12 +148 54 33  -23 30 32                          + 1094.526
 11 11 13 +151  6 58  -21  6 34                          + 1094.062
 11 11 14 +153 14 42  -18 40 27                          + 1092.674
 11 11 15 +155 18 28  -16 12 30                          + 1090.372
 11 11 16 +157 18 54  -13 42 56                          + 1087.168
 11 11 17 +159 16 37  -11 11 59                          + 1083.075
 11 11 18 +161 12 13  - 8 39 52                          + 1078.110
 11 11 19 +163  6 16  - 6  6 47                          + 1072.290
 11 11 20 +164 59 17  - 3 32 55                          + 1065.637
 11 11 21 +166 51 52  - 0 58 28                          + 1058.173
  11 11 21 22  LONG.  +167 34 25  PASS NO.  410 + 1055.056
 11 11 22 +168 44 31  + 1 36 24                          + 1049.922
 11 11 23 +170 37 46  + 4 11 30                          + 1040.911
 11 11 24 +172 32 12  + 6 46 38                          + 1031.168
 11 11 25 +174 28 23  + 9 21 36                          + 1020.724
 11 11 26 +176 26 55  +11 56 11                          + 1009.609
 11 11 27 +178 28 24  +14 30  9                          +  997.858
 11 11 28 -179 26 29  +17  3 15                          +  985.507
 11 11 29 -177 17  2  +19 35 11                          +  972.593
BSANDS 100 11 11 29 58.379  W67.7688   1944.068    NE        **
 11 11 30 -175  2 28  +22  5 38                          +  959.154
 11 11 31 -172 41 59  +24 34 15                          +  945.230
 11 11 32 -170 14 40  +27  0 37                          +  930.866
 11 11 33 -167 39 36  +29 24 17                          +  916.103
 11 11 34 -164 55 43  +31 44 41                          +  900.987
 11 11 35 -162  1 57  +34  1 13                          +  885.566
BSANDS 100 11 11 35 43.851  N68.4103   1825.701    NE
 11 11 36 -158 57  9  +36 13 12                          +  869.887
STNFDU  98 11 11 36 33.825  W89.3973   3359.242    NE        **
 11 11 37 -155 40  9  +38 19 49                          +  854.002
 11 11 38 -152  9 50  +40 20 10                          +  837.961
 11 11 39 -148 25  8  +42 13 15                          +  821.817
```